AUSTRALIA'S MAGAZINE FOR TEXAS INSTRUMENTS 99/4A HOME COMPUTER

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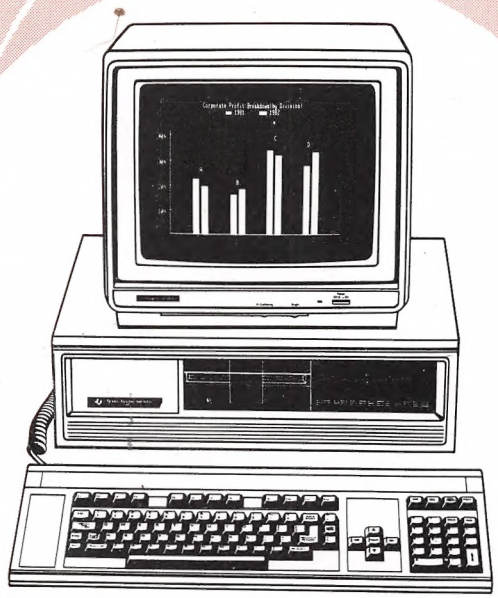
SOFTEX



- ☆ TI-Professional
- ☆ Introduction to Multiplan
- ☆ Learning TI-WRITER
- ☆ Graphx
- ☆ Character Definition
- ☆ Speech Recognition

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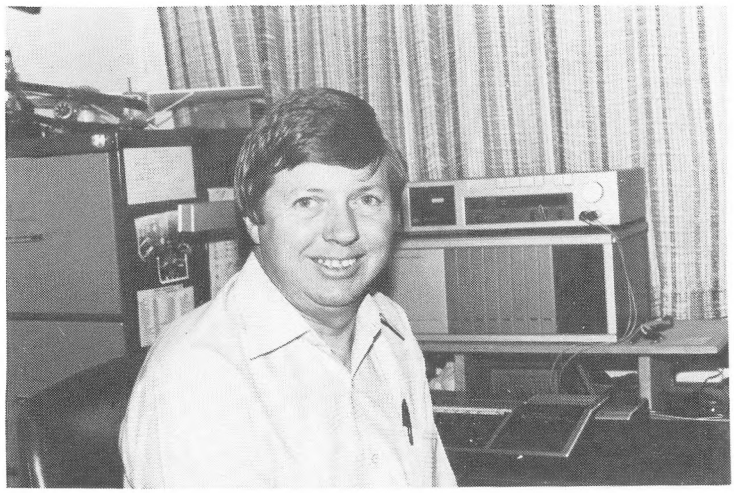
Editorial



This is our 6th. issue and completes Vol. No. 1 of the Magazine. Since asking for renewals in the last issue we have received numerous subscriptions, but to date there is not a real indication as to how many will subscribe, although subscriptions have slowly increased over the last 15 months. We are still only reaching a break even point on printing costs because of our continual increase in quality, and we survive purely through retailing.

If you wish to see this magazine continue it is vital that you do renew your subscription as if not enough are received we may have to decide to cease producing SOFTEX in its present form. Let me assure you that if for some reason it is not viable to continue then all subscriptions paid in advance will be refunded.

All readers will be aware that the Australian $ is taking a battering, and we will see a rapid increase in prices of imported goods. A quick calculation of the increase in costs for goods is about 25%, which will have the effect of slowing the computer market even further. Over the last 12 months there have been numerous companies that have closed their door owing thousands of dollars. Because of slow sales most Importers have tried to both Wholesale and Retail in order to generate cash flow. This has only compounded the problems faced by the small retailer who can not buy his stock any cheaper than the Public. Those reading local magazines are well aware of Printers, Disk Drives, etc. being offered at cheap prices, although it is noted that some have found these companies unable to supply their goods immediately due to bulk buying practices. If this trend continues there will be few shops left for you to browse through in the future with product support being non existant.

Some 18 months have gone by since the TI-99/4A ceased production. Shortages of equipment, particularly for those wishing to upgrade are now occurring. The number of dealers are beginning to dwindle due to lack of product to sell. In Melbourne only 1 dealer stocks a limited range of goods for the 99/4A, and I suspect that shortly this level of support will even cease, leaving SOFTEX and the various User Groups around Australia to support your needs. In some ways this may be a good thing as those left will know what they are dealing with. As time goes by the large pool of equipment that will eventually reach the second hand market should support those dedicated users left for years to come.

Already most of us know some who have deserted the TI ranks believing that brand 'X' will support them better, but I wonder how many have been only disillusioned by what appeared attractive or 'popular' only to find that the other offerings did not come anywhere near the TI product. Despite it being some 5 years since the 99/4 and 99/4A came onto the market little new has come onto the domestic market, and those which have often extoll features that TI had designed originally on the Home Computer, eg. Sprites.

As time goes by the means of increasing the power of the 99/4A has been available. It is possible to run 4 360K Disk Drives (using Double Density/Double Sided Drives) which eclipses the basic IBM PC and TI Professional computers, although they can add up 4 Disk Drives if required, and a Hard Disk (also available for the 99/4A).

Don't loose faith in your 99/4A yet, as it will continue to serve you for many years to come. Equipment will continue to be available, but the only avenues of support will be found from the various User Groups and Softex, so make sure that you support them so they can assist you when you need help.

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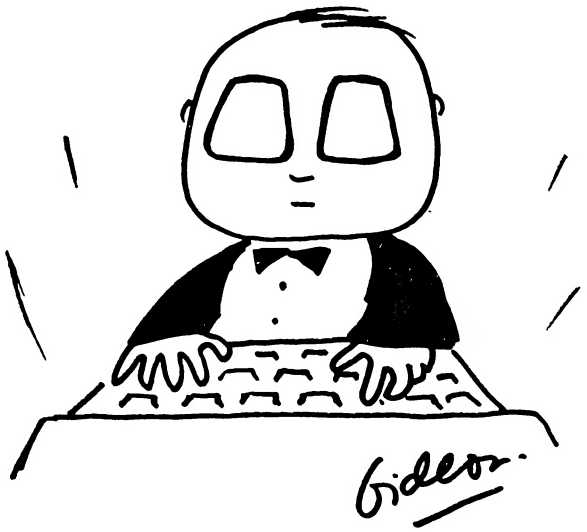


MISTAKEN IDENTITY

The Editor,

Dear Sir,

I certainly enjoyed reading the December 1984 edition of Softex, and wish you future success with this publication.

There is one thing I wish to point out to you and you may wish to correct it in the next issue of Softex.

I refer to Wayne Worladge's article on "Brick-Bat", where I am mistakenly given credit for improving the game. The correct person to whom this article should refer is Phil West.

Lindsay Preece,
Perth, Western Australia.

EDITOR: Thank you for your letter. We apologize to you and Phil West for our error.

SUPPORT THE 99/4A!

The Editor,

Dear Sir,

I have received my fifth edition of SOFTEX Magazine now, read with interest all the latest happenings around the country and felt I must comment on the bad news I read in your column. I was sad to hear where the magazine will only be printed on a quarterly basis; I, like many other readers would rather see the opposite, and of course, that is a monthly edition of SOFTEX. I realize this cannot be practical for you and the other workers associated with SOFTEX as we all know this is done on a part time basis, however, it is still sad we can only expect a copy four times a year.

I personally hope SOFTEX can survive the years ahead, and my support is enclosed in the form of my next subscription fee to SOFTEX. I guess it is only up to the fellow owners and users now to get behind the local market and support you and others with investments in the future of the 99/4A, but I know first-hand what it is like trying to extract dollars from some computer owners.

In closing, it was pleasing to see you made use of the photo of the workstation I sent you. All the best for the New Year ahead, and of course the 99/4A.

P.S. The "Corcomp" article in SOFTEX was what I have been waiting for, really good news, and best report yet on Corcomp.

Rex Shephard,
Rokeby, Tasmania.

EDITOR:

Rex, flattery will get you everywhere! Seriously, though, thank you for your kind comments.

We would like nothing more than to be able to publish more often than quarterly, but the practicalities of time available dictate otherwise. Over the issues, we have continually attempted to upgrade our magazine, and shall continue to do so. We intend to make each issue well worth the long wait.

We heartily endorse your comments regarding getting behind the local TI-supporting organizations - not only SOFTEX, but others who are attempting to meet users' needs. All we can say is, if you want something for your computer, and can't get it, chase us up. We will do our best to help. If we don't have it, we probably know who does.

MENU-MAKA

Dear Doug,

Greetings! Happy New Year! Well, I finally received the new issue of Softex! I think your magazine is getting better and better. I do have a few comments. First, I thought the Menu-Maka program is fantastic! However, I have encountered a few problems. One, when I select a different screen colour, different character colours and start with an initial line of 100 with increments of 5, the program breaks with SYNTAX ERROR IN LINE 410! I have checked and rechecked, but cannot find the error.

I have enclosed a program listing that does "true" 28 column listings and does not truncate them. I noticed that yours did separate every third part of a line. Also I want you to know I am not criticizing you! Two, is it possible to right justify the screens with Menu-Maka?

Second, I think the program, entitled "Disk cataloguer" was excellent. However, I again have a few comments. One, I thought the program could have used no more than two letter names for clarity.

Two, I am hoping that you will issue a challenge in the next issue to add the following:

1. Check for duplicated diskettes, and update if duplicated;
2. Give sectors used and available;
3. Allow for a printing of all diskettes, and the total sectors used and available;
4. Allow the program to catalogue the diskete to the screen, before it is added to the file;
5. Give the necessary corrections to allow it to run in Extended Basic;
6. Give the necessary corrections to allow one to use a serial printer;
7. Submit a listing that incorporates all of the above.

I don't want much, do I?

I hope things are going well at Softex. Well, I'll talk at you later. Is the corrections to the Assembly Language book by Molesworth copyright?

Ed York,
West Chester, Ohio.

EDITOR:

Thank you for your letter, Ed. Regarding your problem with Menu-Maka, without knowing the other options chosen, it's a bit difficult to see what could be wrong. Have other subscribers found the same difficulty?

I referred suggestions similar to yours about Disk Cataloguer to the Author prior to publication, but he felt that the way the program had been written precluded the changes specified. We do agree your suggestions would greatly enhance an already very good program. If anyone else would like to have a try at the above modifications, we'd be pleased to hear from you.

Rob Williams, of the Perth Users'Group, Western Australia, wishes only to receive acknowledgement as the source of the corrections, as would SOFTEX, for printing them.

TIC-TAC-TOE CORRECTIONS

The Editor,

Dear Sir,

I would like to draw your attention to several errors in the program listing of Keith Toghill's "TIC-TAC-TOE" (p.33, SOFTEX no.3). Corrections are underlined.

LINE 830

```
Z=0::CALL SOUND(100,800,9)::
TURN$= "YOURS" :: IF CV=176 THEN
850 :: IF SP<>9 THEN 470 ELSE 870
```

LINE 1160

```
FOR Z=13 TO 21 STEP 4
```

LINE 1200

```
W=SEARCH*4-3 :: FOR Z=8 TO 16
STEP 4
```

LINE 1320

```
SP=SP+1 :: IF E(12,17)=0 THEN
E(12,17) =88 :: CALL SPRITE
(#SP,88,2,86, 126) ::GOTO 830
```

LINE 1340

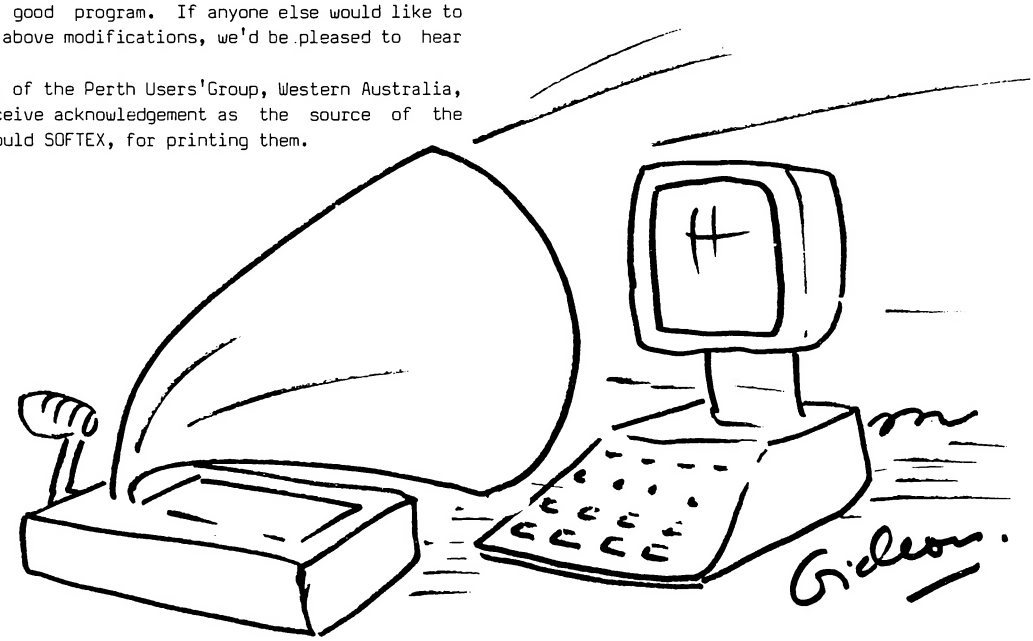
```
SP=SP+1 ::IF E(16,21)=0 THEN
E(16,21) =88 :: CALL SPRITE
(#SP,88,2,118, 158) :: GOTO 830
```

Yours sincerely,

Bill Perreau,
Donvale, Victoria.

EDITOR:

Thank you for your letter, Bill. It is gratifying that readers do actually use the programs published.



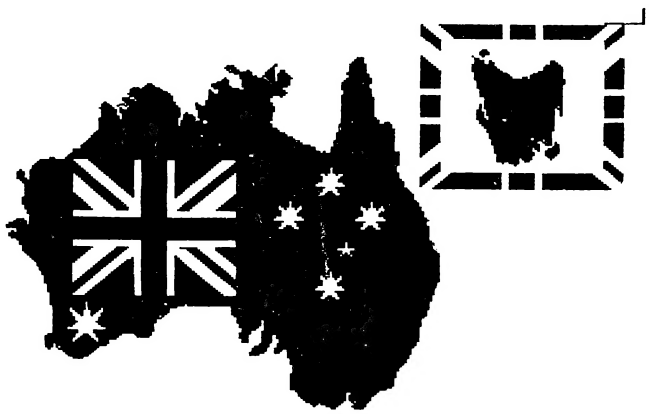
Softex Review — GRAPHX

"MACPAINT" MOVE OVER!

OR

HERE COMES "GRAPHX"

By Wayne Worladge



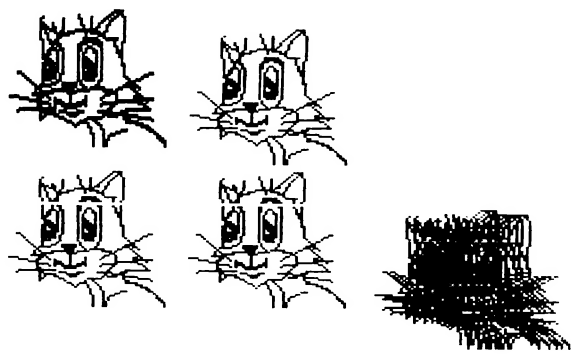
When the "MacPaint" option for the Apple Macintosh became available, a friend of mine in the real computer business extolled its virtues to me.

"But it's a gimmick, isn't it?", I asked.

"Perhaps", he replied," but it's wonderful what you can do with it."

His closing words must have been prophetic, for they more than adequately describe "GRAPHX", a program developed by R.L. & C.P.Davis, of Sydney.

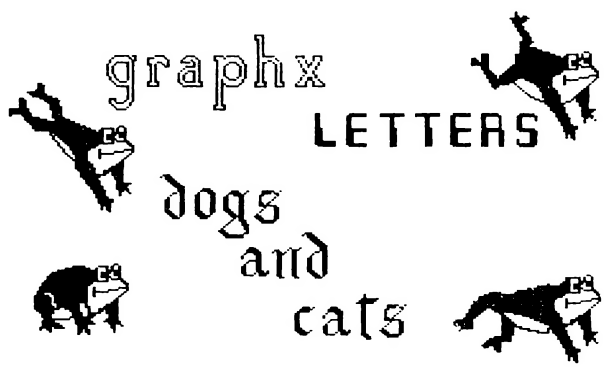
GRAPHX allows you to use the joystick to draw patterns on the monitor screen. I can hear the knockers saying:"So what, LOGO does that!" Well, LOGO does draw pictures on the screen, but each line has to be programmed, and it is painstaking, to say the least. GRAPHX allows the drawing to be done much more rapidly, and the joystick is the main implement.



If you are inclined not to read on, consider this: It should be entirely possible to use GRAPHX in the preparation of building plans.

Before going into detaiis, first the basics. The program is disk-based, and requires 32K memory expansion, and preferably, a printer. It is offered in three possible forms: EDitor/Assembler, Mini-Memory or Extended Basic. Your choice depends upon the modules you have, but it would seem nearly anyone would have at least one of the three. A detailed, 48 page instruction manual is supplied with the disk.

The Extended Basic version runs automatically on choosing Extended basic from the Title Screen. For the others, it is necessary to insert the correct module, choose Basic, and type in "OLD DSK1.GRAPHX", followed by "RUN".



A white screen appears with a blue border. The "cursor" is black, and resembles the spokes of a wheel which do not meet in the middle. I was puzzled by this shape for a while, but the reason is obvious - the "spokes" aid you in drawing.

There are two distict types of options avaiiable. The commands needed for assistance in drawing are accessed by

use of the number keys. A slide-in plastic strip is also provided, with the functions clearly labelled. However, these functions are accessed without having to press the "FCTN" key. The keys can be pressed directly.

The second set of commands are those used less frequently, and are available from a set of menus accessed from the "=" key. More about them later.

Keys 1 & 2 are labelled "slower " and "faster" respectively, and this relates to the speed of travel of the cursor. Slow is for inticate work, medium for easy drawing, and who the heck could handle fast I would not know. Still, with practice??

Key 3 is labelled "draw". One press of this key causes cursor movement to leave a trail, as it were. This is the drawing mode. To leave it, you press 3 again, and move the cursor to the next part of the screen you wish to draw upon.

Key 4 is "erase", and is self-explanatory. This mode is entered and left in the sam way as drawing.

Key 5 is "nohelp", and deletes the text from the screen which is thoughtfully put there to assist you.

Key 6 is a beauty. It is labelled "zoom", and that's what it does. One press of 6 and a square appears on the screen. This square can be moved around with the joysticks to the area you want enlarged, whereupon a press of the fire button locks it in place, and enlarges that area. Draw and Erase work as normal, the only difference being that the line you draw is considerably thicker, and the pixel shape is more evident in oblique lines. Pressing 6 again returns to the normal screen.

Key 7 is "colours". The default settings are a white screen, a black cursor, a black drawing and a blue border. All of these can be altered to any of the available colours.

Here it is pertinent to describe how the author of this program has really carefully thought out his method of menu selection. We are all aware of the normal method: the choices, usually numbered, are displayed on the screen, and one has to press the appropriate key, then enter. While this is no great hassle, the author of this program has made it simpler. He has realized that the person doing the drawing will have the joystick at hand, so he has made menu selection joystick-based.

When a menu is displayed, (as with the "colors" key), the options are listed vertically, unnumbered, and all of them are in green print on white except one, which is printed in black. You move through the menu with the joystick, and as

you do, successive options change to black, and the ones you have left change back to green. When the option of your choice is black, you simply press the fire button, and you have made your choice. Very thoughtful stuff!

Keys 8 & 9 allow for the fact that we are not all made of the same stuff as Leonardo da Vinci, and drawing of circles, and even straight lines, may pose us problems. So press 8 for "lines" or 9 for "circles", and the circle, say, appears on the screen. It can be moved around, changed in shape (to various types of ellipses), in size and in location. All of this is done with the joystick. When you are finished, another circle appears, concentric with the first one. If you don't want it, a press on the fire button will take you back to normal mode.

It sounds silly to have an option to draw lines. However, while horizontal or vertical lines are relatively easy, lines at an angle are very difficult, if not darn near impossible. When you press 8 for "lines", a line appears from where whe cursor was centred. You control its length and direction with the joystick. When you are finished, you can return to normal mode, or move the joystick, and another line will appear, joined to the end of te one you have just finished. And so on.

Key 0 is labelled "copy". This key dials up a menu which enables you to copy or move a section of your drawing to another part of the screen. A square appears on the screen, and joystick movement changes the size of the frame from 16 by 16 pixels to 64 by 64 pixels in three stages; that is, you have four different sized frames to choose from. When the right size appears, simply press the fire button, then move the frame to the area to be copied or moved, and so on. You can move or copy with the existing colours, or without them.

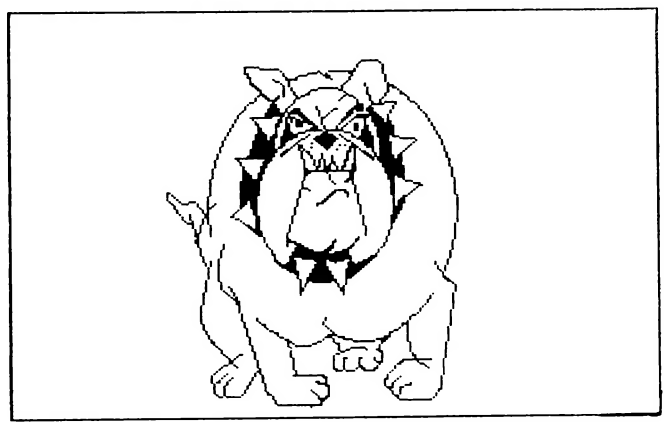
The "=" key is labelled "menu" and gives access to other functions. There are too many even to list, but I shall detail a few of the most important. Needless to say, you can read from, or save to, disk. However, you can also save parts of your drawing to "clipboards". This enables useful parts of a drawing to be used later in another drawing. The "frame" system, as in "copy" is again used. As well, there are some pre-programmed clipboards - a frog, a man, gothic and hollow characters.

Using typewriter mode, you can type text to any area of the screen you wish, and here the cursor returns to its more usual shape. Colours can be changed using "repaint". Shapes can be filled using "fill", a most useful function.

A grid is available for the screen, termed "grey boxes". The reason for the naming is that rather than a grid, it is a chequerboard effect. I have established that a horizontal "box" is a quarter of an inch in length. I established this by drawing a square 12 by 12 "boxes". When printed out on "large", the size of my square became 2 and 7/32 of an inch. The 12 by 12 square was not square on the screen, which is a little unnerving, but prints out OK.

Finally, but most important, your drawing can be dumped to your printer, in a choice of two sizes and two print densities.

There is lots, lots more, but if I go on, I may as well send you the Instruction Manual. There are two most gratifying things about this program. One, it is an Australian program of World quality, and two, it is only $50.00 plus $2.00 post and packing, which must rate as the best value for money since the halycon days of TI-Writer being $49.00!



dogs and cats

Learning to use TI-WRITER

A simple way to get started

A BEGINNERS GUIDE TO TI-WRITER
OR
HOW TO WRITE A SIMPLE LETTER

By Walter Arnold

OBJECTIVE (HUMOUROUS?)

This document is designed to give you enough information, in accordance with the old Japanese saying: "Learning Judo is one easy lesson and ninety nine hard ones".
This is the one easy lesson!

SERIOUS OBJECTIVE.

Lets be user friendly.

START UP

Insert Command Module TI-WRITER
Press any key
Select TI-WRITER
Insert Disk that came with the WRITER package (the PROGRAM DISK)
Select "Text Editor"-Press 1<ENTER>
Select screen colour-Press<CTRL 3> (successively)
Remove PROGRAM DISK (to "make room" for your TEXT "save" DISK, assuming that, as an amateur, you only have one disk drive.
Set TABS

Note 1: If you want to indent the first word of every paragraph, or you want each line of your address to start under the one above, it is possible to "SET TABS". Moreover you can set as many as you like across the page , for whatever purpose.

SET TABS

Type T<ENTER>
Move cursor across pressing spacebar.
At 7 Type L (Left Margin)
At 12 Type I (Indent)
At 50 (or thereabouts) Type T
At 72 (or thereabouts) Type R
Press<ENTER> to "set" Tabs.

Note 2: The above instructions assume that you have an 80 column printer. You wouldn't be writing a narrow letter would you?

WHAT DO I DO NEXT?

You see, looking down the "page":
(a)A list of words running across the top of the screen and you DON'T KNOW WHAT THEY MEAN. Cease worrying and read on.
(b)A Line Number "0001" at the LH margin and the rest of the line blank.
(c)Where Line No. "0002" should be is a phrase "* End of file Version 1.0". This statement is just a dumb way of identifying the blank line above, as where you are going to type.

What you do is:
(d)You reach out to that there keyboard and you start ritin writin ritn wrighting writing.

What do I do next?
(e)You go on writing until you have about ten lines on the screen. Then you experiment, experiment, EXPERIMENT with these Editing (or Text) Operations and Commands below.

Because why?
(f)You are in EDITING OPERATIONS (Edit Mode) and the next section tells you how to correct mistakes and wack around your little old text. This section is all about manipulating the text while it is on the screen.

EDITING OPERATIONS (EDIT MODE)

PLACING THE CURSOR (without altering text)
Press<FCTN "ARROW KEY"> (just like you always do)

Note 3:You can then "write over" to alter text. This is much slower than learning the special function keys.

TO GO TO NEXT TAB
Press<FCTN 7>

INSERT TEXT (INSert CHARacter)
Place cursor on "first new letter".
Press<FCTN 2>
Type the insertion (not forgetting any blank

spaces you want left). Then "CLOSE UP"

CLOSE UP Press<CTRL R>

LEAVE A LINE BLANK
Take cursor to LH margin
Press<ENTER>

INSERT A BLANK LINE (into text)
Take cursor to LH margin (where you want the space)
Press<FCTN 8> (text, on and below the line, goes "down" to leave a blank line.

DELETE A CHARACTER (Del Char)
Press<FCTN 1>
Hold the "FCTN" button down and keep on pressing "1" and it goes on deleting!

Note 4:This command will also delete the "Carriage Return Symbol". If your printout shows a line of text displaced towards the LH margin look for a C/R symbol at the LH end of the line. Erase the C/R symbol and reprint. The text should now "line up".

DELETE A LINE
(It can either be a line of text or a blank space).
Press<FCTN 3> or <CTRL R>

DELETE END OF LINE (to R of cursor)
Press<CTRL K>
(See General Notes for a further comment).

LAST PARAGRAPH (GOTO start of it)
Press<CTRL 6)

NEW PAGE (instruction to printer)
Press<CTRL 9)

Note 5:If you are using sheet paper in your printer this "stops the clock" while you insert a blank page.

Note 6:The Brother EP 44 doesn't seem to respond to this command. Or maybe I would find a way, if I was an expert. Tiny sigh! However it does something equally as good. It stops on a "PAPER EMPTY" signal. You feed a new sheet in and press the "GO" button.

OOPS! (The I've "STUFFED IT" Command"
Press<CTRL 1>

Well folks you use this command when you realise that your last Command was wrong and you had rather you hadn't done it.
If you have already made a "second" key stroke you won't retrieve text because your boo boo wasn't the last stroke!
This miraculous command is the most useful one of all.

Don't be ashamed if you find yourself using it once in a while.

Note 7:All the above instructions, (grouped as Editing Operations), enable you to write something down, and subsequently change it: if you can't spell, had a better idea or whatever.

TO GOTO EDITING OPERATIONS (writing) FROM COMMAND MODE
Type E<ENTER>

EDITING COMMANDS (in Command Mode)

Note 8:The "Commands", of this group, enable you to manipulate or dispose of text. Don't worry if you don't understand the last sentence. Read on and it all becomes obvious. ie. to save the text on disk, feed it into computer memory, print it out, etc. In summary, this is the "mass muck around" section.

TO GOTO COMMAND OPERATIONS FROM EDITING MODE
(from"Writing" to "Edit Commands")
Press<FCTN 8> (Command/Escape)

SAVE ON DISKETTE (Save File)
Type SF<ENTER>
Type "DSK1.Filename"<ENTER>

Note 9:The above instruction assumes that you have the disk, on which you wish to preserve your deathless prose, in Position 1. ie.single disk operation

Note 10:This disk is the already initialised TEXT DISK prepared to save your Correspondence".

Note 11:The experts inform me that, if you have the money and the joy of two disk drives, you arrange them thus .

a)If you have both a single sided (SS) and a double sided (DS) put the SS in Position 1 and the DS in Position 2.
b)Put the PROGRAM DISK in Position 1 and the TEXT (file or working) DISK in Position 2.
c)You can then leave your PROGRAM DISK in all the time you are running WRITER.
d)It also means that with a DS Disk in Position 2 you have twice as large a file memory.

RETRIEVE INFO FROM DISKETTE (Load File)
Type LF<ENTER>
Type "DSK1.FILENAME<ENTER>

Note 12:Steady the Buffs! You have just typed in the above "Command" and you get an error signal. You type it in again. Nothing but ERROR SIGNAL yet again ! But everything looks OK. You have the right "spelling" and spacing for "DSK1.FILENAME", but have you? Check again. While you have "Capitals" on the screen have you typed the "name" with either "ALPHA LOCK" down or the SHIFT key down, to really give you Capital Letters? You haven't have you...Problem solved. Type "DSK1.FILENAME" again in CAPITALS. Press<ENTER> Eureka! The disk drive light

glows and you are away.

MOVE A LINE (OR MORE) OF TEXT
Type M<ENTER>
Type "Line No" of first "move line". Leave one space.
Type "Line No" of last "move line".
Leave one space
Type "Line No" of line after which the "moved text" is to be put. Press<ENTER>
A blink and its all happened !

PRINT THE TEXT (Print File)
Type PF<ENTER>
Type ("Devicename of Printer")<ENTER>

Note 13:Print <RS232> for a serial printer.

Note 14:Forgive me for stating the obvious, but we are all beginners! Before you can PRINT TEXT ("a file") you must first load it from the TEXT DISK into the computer memory.

STOP PRINTING
Press<FCTN 4> and/or Press<"Printer stop button"> (doing whichever is the fastest if the "emergency" is serious.

Note 15:You can only use this command if printing is in progress.

Note 16:I put Note 15 in, just to confirm that you are awake and thinking.

PURGE FILE (delete letter from memory but not from Disk.)
Press<FCTN 9> (if "writing") Omit this step if already in Command Mode.
Type F <ENTER> (Goto File Commands)
Type P<ENTER> Purge(file)
Then assure the computer that you really want to purge it.(Y or N?)

GENERAL NOTES

OK folks the instructions above are the bad news.

Now for the good news.

I invite you now to peer hard at the little strip that came with your Writer package. If you haven't got this strip in place, in the shallow slot just above the keyboard, do it now.
After some study, you will realise that some but not all, of the "Processes" are indicated on this strip. The ones that are missed out on the strip are those where the "FCTN" or "CTRL" buttons are pressed simultaneously with a button not in the "top row".

The only important (for amateurs) "control function not on the "top row" are <CTRL R> and <CTRL K>.

As a small hint to the "advanced amateur": I beg to inform you that "DELETE TO END OF LINE Press<CTRL K>" in conjunction with other editing keys can shorten the number of correction "key strokes".

For money I will tell all.

Best you fiddle round and find the short cuts out for yourselves.

Not being a twisted minded Yankee, I refuse to use the garbled bunch of consonants as TI labelled them. I think that my abbreviations are more easily comprehended.

WRITER is like an addictive drug. I started out with a far smaller list of "Processes" than I now pass on.
Just in the writing down of these hints, originally for my wife and children, I have found the need to improve the layout of text by adding more and more "commands".

If all this training encourages you to venture in to the "quicksands" of TEXT FORMATTER, my best wishes go with you. But I Must in all seriousness point out that if you go on you will lose your amateur status.

Good writing all you amateurs out there.

EDITOR'S NOTE

We are not paticularly sure that this is the best way for one to learn TI-Writer. As Walter says, it is one easy lesson and ninety-nine hard ones. TI-Writer is one of the most complex items of software available for the TI 99/4A, yet, as Walter shows, it is not hard to get started. We maintain the best way is to work through the manual, but if, like Walter, you don't have time for that, then anything that gets you started is good. Be warned, though, that Walter's method does not allow you to take advantage of your printer's special character codes. However, familiarisation with the commands has to be acquired, and this is as good as any way of achieving that goal. Ed.

Introduction to Multiplan

By Wayne Worladge

The best thing since TI-Writer?

("Multiplan" is a trademark of Microsoft Corporation Inc.)

Requirements: Console, Expansion System, 32K Memory Expansion, Disk Controller Card and at least one drive, RS232 Card and Printer.

Writing an article on a program such as Multiplan is difficult. Those who have, and use it, will know as much, if not more than I, and those who don't have it will find it difficult to appreciate.

The course we have adopted is to confine this article to a general description, leaving the next article to cover programming tips for it.

Multiplan is produced by Microsoft Corporation, and is such a universally acceptable program that regardless of the type of computer you have, it will be available for it. The nearest comparison would probably be "PAC MAN", a game so popular that is was made available to nearly all systems.

With Multiplan, the program, and the way you operate it, is IDENTICAL on all systems. The only differences you are likely to find are the control keys used, which is a function of the type of computer, and the way the cursor is shown on the screen. And, Oh yes, one other difference...price! TI's version, at $108.00, is by far the least expensive version around. Depending on the type of computer, it could cost up to $600.00. Why? Ask the manufacturer!

I use Multiplan both at home and at work, on our ICL DEC-20 mini. The one at work uses square brackets as the cursor, and it can be darn hard to find it at times. Otherwise, the only difference is the RAM available.

What is Multiplan?

Multiplan is an electronic spreadsheet. Imagine a large sheet of paper, 255 rows deep, and 63 columns wide. Further imagine that the rows and columns are defined by lines, so that you will end up with 16065 rectangles on the page.

That is the makeup of one "sheet", and the basic unit that one uses is the individual rectangle, or cell. The cell's relationship to an electronic spreadsheet is similar to the relationship of line numbers to BASIC. Both are the essential element around which the operation revolves.

The cursor, a white band, covers one cell exactly. Cells are described by their row and column numbers. Thus R1C4 is the cell at row 1 column 4, and R2:5C7 is the group of cells from row 2 to row 5, column 7, and so on.

Cells can contain figures or text, and you move around the sheet by using the arrow keys. Naturally, the screen cannot accommodate all of one sheet. As you pass any border of the screen, the next row or column appears, not instantaneously, as in TI-Writer, but gradually, as the columns reprint in a scrolling motion. This can become tiresome, so methods have been made available to move more rapidly around the sheet. The use of the control key (CTRL) and the arrow keys moves you one screenful at a time, while CTRL 1 (the "home" key) moves back to the top left of the sheet, and FCTN 1 moves to the lower right of the sheet.

Cells can be set at virtually any desired width. A default value is preset, but the width of any column of cells can be changed at will. In fact, the default can also be changed.

The presentation of data in the cells can be selected from a wide number of choices. You may choose to have the data to the left, the right, or in the centre of the cell. It can be preceded by a dollar sign, if wished, or have the desired number of decimals shown. All sorts of options are available using the Format command.

To enter data into a cell, simply position the cursor over the cell chosen, choose "Alpha" command, and type in the entry. The entry appears at the base of the screen, where it can be corrected if necessary. To place the data in the cell, simply moving the cursor with the arrow keys to another position is sufficient, or "Enter" can be pressed.

Now we come to a very important aspect of Multiplan. Cells can contain formulae as well as data or text. Suppose you have a column of figures, and you want the answer to be calculated, and shown somewhere on the sheet. Simply move to the location desired, (as long as that cell has not already been used), get into numeric mode by pressing "=" or "V" ("Value") and then type in the formula. In this case it would be "SUM(C1)". The answer will then appear in that cell. Thus, you can arrange your answers to appear wherever you wish them to be.

OK, very good, you say, but for a large array of data, entering all those formulae could be very time consuming. Well, there is an easier way. Multiplan has two sorts of references to cells - absolute and relative.

Absolute references have been described already, (R11C34, for instance). Relative references are different.

The program keeps track of where the cursor is at any time, and displays the location at the base of the screen. (It also displays the contents of the cell concerned, incidentally.) When you go to type in a formula, say, for instance, "SUM(R3:27C2)", if you move the cursor to the cell where the answer is to be shown, say R29C2, and then type "=", followed by "SUM(", the present location of the cursor is displayed after the bracket. Now move the cursor to the first item in the row to be added, and the position of the cursor RELATIVE to the cell in which the answer is to appear will be displayed. The formula will then appear as "SUM(R[-26]C". Then, press ":" and move the cursor to the last item in the column to be added up, close the bracket, and what will appear will be "SUM(R[-26]C:R[-2]C). In other words, a formula describing locations relative to the chosen answer cell.

You will note that no specific column number is specified. It does not need to, as the column was the same as that containing the answers; that is, the cell to which the others are relative. It is a general formula, and being such, can be copied using the "Copy" command. You can copy it from the cell it is in to all the cells at the bases of the column you want added up, and it can be done in a flash.

The relative references, once set, can be changed to absolute references by one keystroke (CTRL 7). Had you carried all this out, you would find that the program recalculates all the answers every time you enter a new figure. As this takes time, it can become tiresome, and so automatic recalculation should be turned "off" (by use of the "Options" command.) Recalculation can then be done only when you want it done, (FCTN 8). Recalculation will also be done before a sheet is saved, or printed out.

All the other editing functions are present: rows or columns can be inserted, deleted, edited, and copied. Also, data or characters can be sorted by column. Therefore, Multiplan could be used for a name/address file.

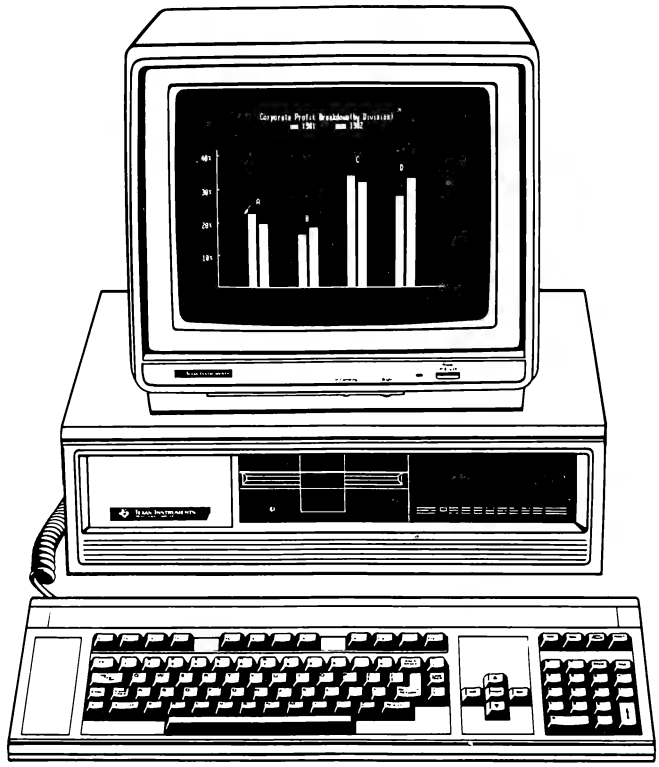
One other command is unique. Cells or groups of cells can be "Named". Suppose you had a cell which showed "Total Revenue", and another which showed "Total Costs". You could show "Profit" by typing in a cell location formula. An easier way is to Name the first cell "Revenue" and the other one "Costs", whereupon the formula becomes "Profits"="Revenue"-"Costs", and you do not have to worry about cell locations.

While the Naming of cells is optional in the example above, there is a situation where it is mandatory. This occurs when information is to be transferred from one sheet to another. Multiplan, like any other program, can run out of memory, and in order to complete a particular task, it may be necessary to "chain" sheets together. (Multiplan displays how much memory remains, in percentage form, at the base of the screen. It also displays the filename you have chosen for the sheet.) This happens frequently in business applications. It could be that one sheet will be used to calculate a column of data, which then has to be used in another set of calculations. The only way that the data in a cell, or group of cells, can be transferred to another sheet is by Naming them, and "calling" them up from the "supporting" sheet to the "dependant" sheet.

Thus, Multiplan is a little like TI-Writer - virtually unlimited in its ability to do whatever task required. It is made even more powerful by virtue of the ability of formulas to contain conditional statements: IF THEN ELSE is a familiar example. AND, OR, NOT and XOR are available, together with all the usual trigonometric and mathematic constants, as well as TRUE and FALSE.

I really think that is enough for now. Suffice to say, there are more powerful spreadsheets around (LOTUS 1,2,3 for instance), but none that I am aware of which will run on the 4A. The other advantage of Multiplan for our computer is that the sheets can be saved in such a way as to be accessible to TI-Writer. So, carry out your analysis, transfer to Writer, and write your report. A powerful system indeed.

TI-Professional



WHAT DO WE DO NOW?

By Ian Streete.

I have been very happy over the years with my T.I. computer. I started with a 99/4 model from Canberra Television. This model was traded back to T.I. on service exchange for a 99/4A. My system was expanded to include the peripheral expansion box, two double sided disk drives,an Epson printer and a Dick Smith modem. I suppose that the most outstanding feature of this system has been the extraordinary reliability. I have never had to have my computer returned for service. It has always performed as it was designed to do. Having been involved with computers at work with such machines as I.B.M. and Kaypro, where reliability has not been so good, the dependability of the T.I. has really been appreciated.

The work that I have done with the T.I. has progressively placed demands for more and more memory and computing speed to an extent where recently I have had to give serious thought to replacing it with a more advanced machine that would run the sophisticated software that has become available since the I.B.M. P.C. came on the scene. The recently announced price reductions by T.I. for its range of professional computers, made this an easy choice so I ordered a standard machine with a monochrome monitor, two disk drives and 256 K bytes of RAM. I have taken delivery and I must say that I am delighted with it. The following article describes the features of the "Professional" for others who may be contemplating a change of machine.

I.B.M. Compatibility.

The "Professional" uses the MS DOS disk operating system developed by Microsoft. This system has similar commands to PC DOS written for the IBM but the "Professional" has a different internal architecture so that programmes written to run on PC DOS are unlikely to run on the professional. This isn't any problem since the majority of programmes which are available for the IBM are also available for the "Professional" and have been tailored to take advantage of the 12 special function keys. The IBM has only 6 keys. Files written under the same programme on either machine can be read on the other provided that they are using the same number of disk sectors. Earlier versions of both operating systems used 8 sectors which resulted in a formatted disk capacity of 320K bytes. Current versions of the operating systems such as 2.1 use 9 sectors resulting in a formatted disk capacity of 360K bytes.

WHY CHANGE AT ALL?

The introduction of the I.B.M. P.C. radically changed the image of small computers. I suppose the view was that if the giant corporation was investing time and effort into their production they would definitely be here to stay. As a result the software houses began to spend massive sums on the development of software for the machine. We are now seeing the results of this development and the emergence of the most sophisticated software that has ever been available for any computer. This software is available for use with the MS DOS operating system used by the TI "Professional" computer and many other I.B.M. lookalike machines. Much of this software, particularly the multi use integrated packages, require large amounts of RAM before they can be used. As much as 256K bytes in some cases. This is my main reason for change, for I can now tackle tasks which the 99/4A could not do because of the lack of software or memory. In fact there are very few tasks that can be done on a personal computer for which really good software has not been written. Thanks I.B.M. your entry into the market has made computing into what we hoped it would become.

ISNT THE "PROFESSIONAL" COMPUTER JUST ANOTHER I.B.M. LOOKALIKE?

There is little doubt that T.I. saw the IBM PC launch with mixed feelings. However, they were able to sit back and wait for any design faults to show up in the IBM PC and then engineer these out of the design of their own machine. This was done, and the resulting "Professional" computer does not have any of the shortcomings of the IBM. Lets take a look at the features that make the "Professional" a better machine.

The Keyboard.

The IBM keyboard has six special function keys, which can be programmed to have dedicated functions with word processing, spreadsheet or integrated software packages.Because of the sophistication of the software, six keys were really not enough. TI have therefore designed the "Professional" keyboard with twelve special function keys. As a result the useability of the machine is greatly enhanced. Making a further comparison, the IBM has a caps lock key which when pressed locks the keyboard into upper case letters. No means was provided however to tell the user whether the keyboard was in upper or lower case. You have to press a key and see what comes up on the monitor. This feature is most irritating. TI have provided an indicator light into the caps lock key so that you can see at a glance which case has been selected. TI also took the opportunity to optimise on the shape of the keys, the key travel, layout of keys and the tactile feel of the keys. The resulting keyboard can only be described as superb.

The Systems Unit.

The "Professional" systems unit measures 19 inches across by 16 inches deep. Access to the inside is gained by the removal of two screws in the top back corners of the back panel. The top cover is then slid backwards and removed by lifting it off vertically. Inside there are five expansion card slots that will take the full width cards. There is a further expansion slot intended to expand the RAM to 256K bytes. Machines are currently being delivered with half height disk drives which are mounted side by side on the front panel. A parallel printer port is standard although for a small additional cost, an RS 232 card is available to enable the machine to be coupled to a modem or serial printer. The computer does not come with graphic capability as standard. This may be added by fitting a graphics card that provides the highest resolution of 720 by 300 pixels on both the monochrome monitor or the colour monitor.

Optional extras available are a 10 megabyte winchester hard disk, a speech recognition and recording card, an analogue input and real time clock card and a "Baby Tex" card that allows the computer to run Z80 CPM programmes. The unit is supplied with a screened switching power supply cooled by a reasonably quiet fan.

A diagnostic diskette is provided with the machine which tests the whole system, the keyboard, the disk drives and the monitor, and is able to tell you which integrated circuit has failed in the event of a fault.

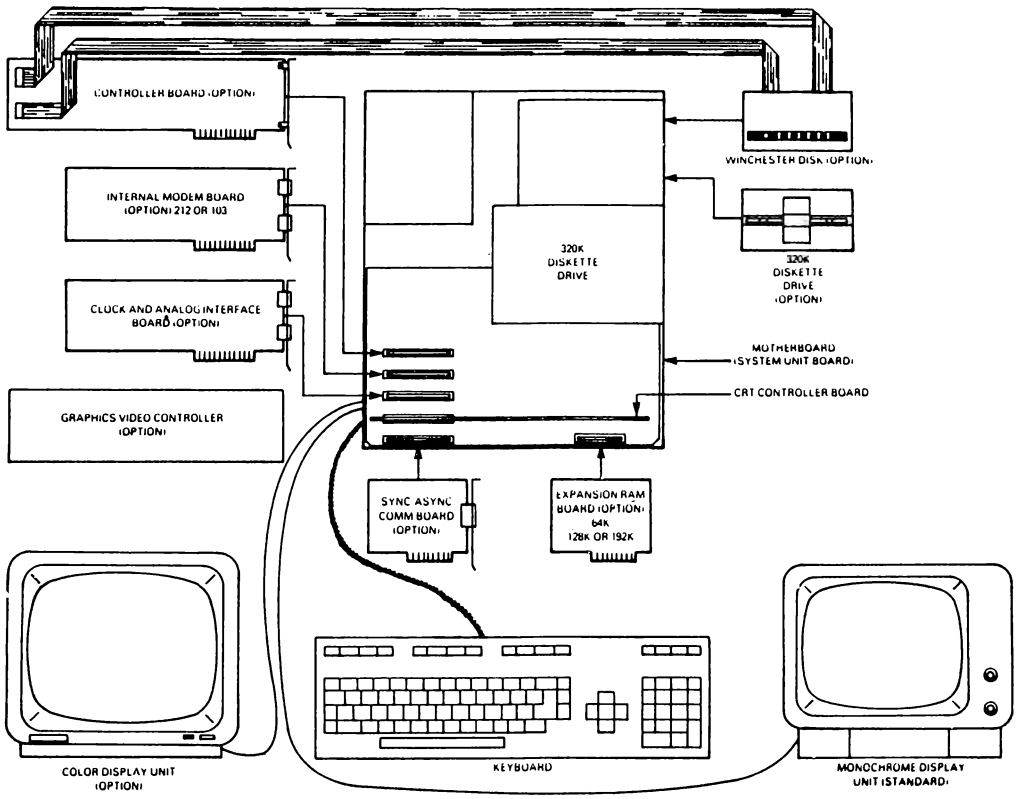
A further difference between the IBM and the TI is worth mentioning. The IBM has a version of Microsoft basic resident in the machine in ROM. TI have not done this and supply MS Basic on disk. This has the advantage of allowing the user to load the latest version of any programming language into the machine without having to alter the hardware and does not use up addressable memory space with something that may not always be required.

Monitors.

Two monitors are available for use with the "Professional", a 12 inch green monochrome or a 14 inch colour. Unlike the IBM, both monitors deliver incredible graphics. The colour monitor provides a choice of 8 colours while the monochrome monitor delivers 8 delightful shades of green.

FURTHER RAMBLINGS.

As I said before, I am delighted with my machine and I think it provides all of the things that we had hoped the 99/4A would do. If you look at the cost of the "Professional", as a percentage of income, it costs the same as the 99/4 when this was first introduced into Australia. For those who are looking for a way to go after the advent of the 99/4A, I strongly recommend the "Professional", it seems to have all the things anybody could want.



Using this program you can play your favourite music tapes through your TV set, and also have a flashing screen display which can be altered to the beat of the music. The TV volume control can be used to make the music louder or vice versa. First enter this program:

```
100  RANDOMIZE
110  CALL CLEAR
120  CALL SCREEN (2)
130  CALL CHAR (28,"OCOC3F3FFCFC3O3O")
140  CALL HCHAR (1,1,768)
150  CALL COLOR (13,2,INT(RND*7)+3)
160  FOR I=1 TO 50
170  NEXT I
180  GOTO 50
```

Line 160 should be made so that the loop is longer for playing slower music.

Check that your tape recorder is plugged into your TI as if you were loading a progrm. Put a music tape into the recorder with the volume at the usual loading position. Type RUN into your computer then press ENTER. Press PLAY on your recorder and listen and watch the results.

Note: If you cannot hear the music, turn the TV volume up and if there is interference try tuning the computer in better.

Speech Recognition/.....from P. 24.

the inspector having to write down the results onto a log, or key them into a terminal. Apparently, this system is in use in the U.S., and considerable increases in productivity have resulted.

McMahan did voice some reservations. He felt there may be applications in the home, say in being able to tell the microwave oven when to turn on to cook the roast, but he seemed to imply that one should not go overboard with speech recognition, as it may become "gimmicky".

TI Pro-lite Computer

Features:

- PRO-LITE Professional Computer, with one built-in disk drive, is small enough to fit easily in a standard 3-inch briefcase.
- Compatible with the full line of software available for the TIPC family.
- Has the power and full functionality of a desktop personal computer, including a 25-line Liquid Crystal Display (LCD) screen, expandability to 768K bytes of RAM, dual 720K-byte diskette drives, and LCD graphics.
- Optional battery pack provides use of the PRO-LITE anywhere.
- PC Interface Cable allows data files to be shared between the TI PRO-LITE and the TIPC or the IBM PC.
- Supports popular communications hardware and software options.
- Solid State Software Module allows custom integrated software to be developed for the PRO-LITE.
- Thermal-transfer portable printer is available for hardcopy output.

Description

The Texas Instruments PRO-LITE measures 2 and 3/4 inches by 11 and 1/2 inches by 13 inches, weighs 10 1/2 pounds, and is packed with the same processing capabilities as its family desktop models. It utilizes a 16-bit 80C88 microprocessor (CMOS version of the 8088 used in the TIPC and the TIPPC), thereby maintaining software compatibility. An optional 8087 coprocessor provides high-speed numeric data processing.The PRO-LITE incorporates the latest in state-of-the-art technology.

It features a page-size, bit-mapped LCD of 80 columns by 25 lines with optional one-plane LCD graphics capabilities. The screen has an adjustable viewing angle as well as contrast adjustment. The full-function typewriter-style keyboard includes 79 keys with 12 programmable function keys and an embedded numeric keypad.

The PRO-LITE internal memory is expandable from the standard 256K bytes of random access memory (RAM) to a full 768K bytes by using 64K-byte or 256K-byte RAM Expansion Boards. Memory expansion and graphics do not take up an option slot and are expandable directly on the motherboard. The system comes with a standard 1-megabyte unformatted, 720K-byte formatted 3.5-inch microfloppy disk drive. This is double the storage capacity of most desktop computers. A second 3.5-inch disk drive/battery

expansion unit attaches to the back of the portable.
The PRO-LITE comes standard with a parallel printer port and an expansion floppy disk port. For users who need to copy data files from a 5.25-inch to a 3.5-inch disk format, a PC Interface Cable is available. This cable connects to either a TIPC or an IBM PC through the external floppy disk port, enabling the PRO-LITE 3.5-inch drive to become an external drive to desktop machines.

Options

For expansion of the PRO-LITE, two option slots are available. A user can select from the following options: Module, External Monitor Interface Module, Asynch/Synch Communications Module (RS-232-C interface), and a Solid State Software Module. The interface module for an external monitor allows the user to utilize the TIPC color or monochrome monitors with 3-plane graphics capability. Standard communications software supported by the PRO-LITE include TTY, 3101, 3780, and 3270 SNA. The Solid State Software Module accepts ROM software (8 sockets for ROMs,EPROMs, and PROMs for a total of 256K bytes) and emulates a disk drive. By using a Solid State Software Module, the user's disk drive is left free for other tasks.

The battery options enable the computer, both in single-drive or dual-drive configurations, to be completely battery-powered. The rechargeable lead-acid batteries allow the machine to run for up to eight hours, depending on the hardware and software configurations.

The Texas Instruments Portable printer weighs 4.7 pounds. It is a thermal-transfer printer capable of printing on either plain paper (utilizing a thermal-transfer ribbon) or thermal paper. It can accept single sheet or fanfold (pin feed) paper. The printer has a 9 x 9 or 15 x 9 character dot matrix with the same character definitions as the TI Model 850 printer. Other features include both TIPC and IBM 256-character sets; printing in normal, compressed, expanded, emphasized, and enhanced print styles; raster graphics in 60, 72, 120, and 144 dots per inch; and paper-out and ribbon-end sensing. The printer can be operated by the same battery that powers the PRO-LITE.

Using the MS-DOS 2.12 operating system, the Texas Instruments PRO-LITE Professional Computer is fully compatible with the TIPC family. This compatibility allows the user to select from the top software applications programs to meet business and professional needs.

Specifications and Technical Information

Physical Dimensions

Length:	13 in.
Width:	11 and 1/2 in.
Height:	2 and 3/4 in.
Weight:	10 and 1/2 lb.

Performance Characteristics

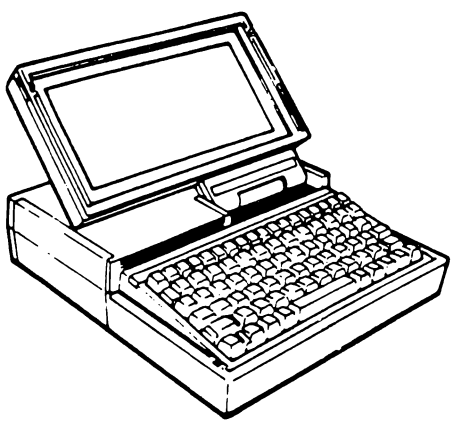
Processor:	80C88(CMOS version of the 8088) 8087 numeric coprocessor (optional)
Clock speed:	5 MHz
Memory:	256K bytes of RAM (standard-minimum) 768K bytes of RAM (expandable-maximum)

Screen Characteristics

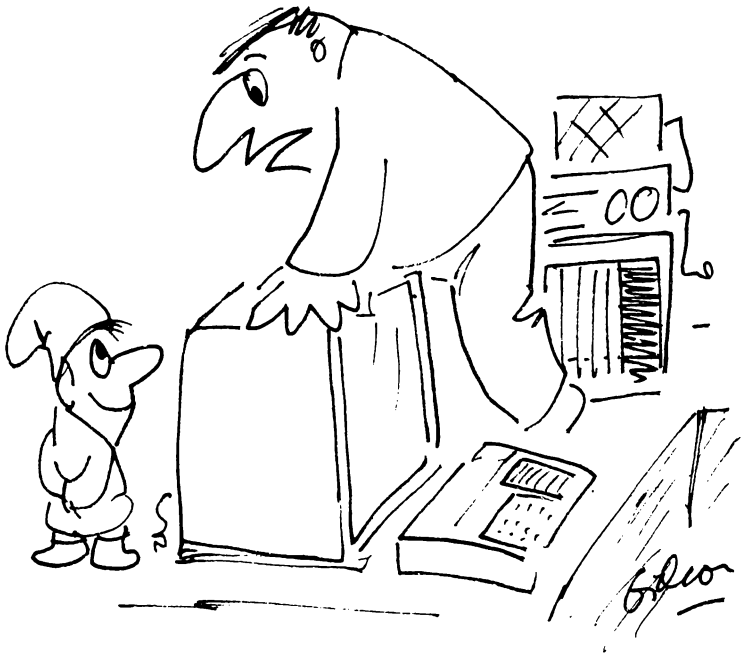
Type:	Liquid crystal display (LCD)
Size:	25 lines bhy 80 columns
Resolution:	640 x 200, text or graphics

Diskette-Drive Characteristics

Type:	3.5-in diskette
Format:	double-sided,double-density
Number of Tracks:	80
Storage capacity:	720K bytes (maximum formatted)
Data rate:	250K bytes per second



IDEA



Do **you** sometimes think that **"GREMLINS"** are in your computer?

Want to cool your console? One of our Florida subscribers, Paul Yorke, has sent a photograph of his set-up, complete with cooling fan attached to the top of the computer. Fans are available at electronic shops, eg. Dick Smith, for about $20/30.00 ea..

A further sugestion seen in a news letter from overseas was to switch the fan in the expansion box with one from the TI-Professional, which is quieter.

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News Briefs

A MYSTERY NEW COMPUTER? OR IS IT?

Ryte Data, of Haliburton, Ontario, have sent a letter to all User Groups, telling them of an important new computer to be unveiled at the June Consumer Electronics Show. This mystery machine is said to be similar to, but beter than, the 99/8 which TI made, but did not release.

Ryte Data have been asked by the Manufacturer not to release any other details, except that it is fully compatible with the 99/4A. Ryte Data are to release a Newsletter which supports it (and the 4A). Send a stamped, self-addressed envelope, and the first newsletter is yours free!

What on earth is all this mumbo-jumbo about? Is the computer the Corcomp "Phoenix", about to rise from the ashes? Or has someone else got into the act?

Whatever the answer, it is a surefire way to get Users to write away for the Newsletter.

THE CORCOMP "PHOENIX"

While talking about computers, not a lot has been heard recently about the fabled 64K computer, slated to succeed the 99/4A.

One does wonder that, even if such a machine came out, what would be its chances of success?

TI spent a fortune promoting the 99/4A, and it would take the backing of a large Corporation to afford the promotional expenditure. Even then, consumers are a lot more hard-bitten than they were even four years ago. So many computers have come, and a lot have gone. Who is going to buy it?

If this machine is to rely on the software base of the 99/4A, then there is no advantage for existing 99/4A owners to convert. If more advanced software is to be made available, who is to provide it? If the software houses won't fool about for over 2 million 4A's, then they are hardly likely to fall over themselves for penetration of an unknown market for a new computer.

Unless, just unless, the new beast is a dual processor, capable of handling both the existing 4A software and another system for which abundant software already exists - MS-DOS, perhaps?

Time will tell, and I'll be only too happy to see my pessimism proved groundless.

MORE CARDS FOR THE 99/4A

Everyone seems to be wishing to fill up the unused slots in the peripheral expansion box. Recently, we have had news of two more offerings. (Is there a prize for the first User to fill up his/her P.E.B.?)

THE MODEM CARD

This offering really sounds interesting! A modem is being offered in card form.

THE CLOCK CARD

This card allows you to keep track of time and date in Extended Basic and Assembly Language programs.

The card comes with software on disk, and all you do is merge the appropriate program into your XBasic program. The makers have started their line numbering from 20000 to allow for merging. The card comes with battery backup, and the life of the batteries is claimed to be one year.

The clock can be set and reset with the software supplied, and there is even a program to make fine adjustments for drift. Leap years are provided for. Whether Gregorian corrections are also covered, we don't know. (I can hear the readers saying "Smart Alec!" already, but year 2000 is not far away, and centennial years are NOT leap years unless the number of centuries are divisible by four. So, 2000 will be a leap year, anyhow!)

What we also don't know is whether the US frequency of 60 herz can be altered to ours of 50 herz. We have written away to find out.

Supplier: B.Angelcyk, 6920 South Creek Road, Birard, Pennsylvania, 16147, U.S.A.

CP/M CARD NOW AVAILABLE

Morningstar Software have had their share of problems in getting their CP/M card off the factory floor, and into the hands of those who ordered them.

We hear the cards are now being sent out, and look forward eagerly to a review of one.

It would appear that any Osborne-compatible CP/M software will run on the card, which, for those who don't know, is really a 64K microprocessor. It makes use of the 99/4A's 32K memory expansion and disk system, but the console

is really only a terminal.

FOUNDATION 128K CARD UPGRADING

Without wishing to be unkind to the makers, it has always seemed that the 128K card was rather limited in its applications. This is primarily due to the fact that the 99/4A accesses only 32K at a time, and the software which could most effectively use the extra memory, TI-Writer and Multiplan, are not capable of doing so. There was talk of software being developed, but it has never surfaced.

With the card in place, there is 96K extra memory available, but it is in 3 portions of 32K. Certainly, it could be used for file storage, but then it was found only one file could be stored in each 32K. They would have to be big files!

Then the concept of the disk emulator was developed. The extra memory is used to store programs, using "SAVE DSK.X" command. Programs could be loaded from and saved to, the memory. Loading time is significantly reduced. The weakness here, of course, is that as soon as the power is turned off, the programs are lost.

Well, it appears now that consideration is being given to incorporation of batteries in the card - rechargeable, we hope.

MEMO TO MORNINGSTAR SOFTWARE

(or anyone who'll listen)

OK, CP/M is very useful, BUT how about getting together with Foundation and providing us with an emulator for MS-DOS. Then we could run "Lotus 1-2-3"! WOW!

Living with CorComp

It is not easy to write much of an article about the Corcomp card for the TI peripheral expansion box. After all, it provides double density disk formatting, which means 1440 sectors for a double sided disk. Thus you can store one heck of a lot of programs on a disk. End of story?

Well, not quite. The Disk manager which comes with the card is really the star performer. When you think of it, it was almost a necessity for a revised Disk Manager to be produced for double density formatting, simply because of the number of programs which can be stored. Consider the "catalog" option of Disk Manager II. The program names are scrolled up the screen, and if you have a lot of programs, it is darn hard to really view what's there.

Corcomp present their catalog in "pages", or screenfuls, at a time. Thus, you can view the contents at leisure, then turn the page with CTRL X, or go back with CTRL E. While talking about the Disk options, it must be mentioned that the disk copy function has a characteristic which must be known. It will copy a whole disk, certainly, but it overwrites whatever is on the copy disk. Moral: copy to a clean disk.

It is in file management that the Corcomp system excels. The contents of the file are displayed in a very similar fashion to the disk catalog option mentioned above, (namely, in pages.) However, in this case, to the left of each filename is a symbol, default "N". You can enter "D" (delete), "M" (move) or "C" (copy) in this column. "Move" will copy the program to the copy disk, and delete it from the master disk. A command to be used with care! Next, program names can be altered, and finally, protection can be turned on or off.

You are then asked if you wish to execute the commands, default "N" for some reason. The option of initializing the copy disk is available, too, thereby obviating the need of first initializing the disk. The instructions are executed while you watch. As each command is carried out, a message tells you what is happening. For example, "copying DSK2.MYFILE" or "renaming YOURFILE", and so on.

When disks are initialized, the option is given of installing "Manager" onto the new disk. This is very handy, but it's just as well it's a double-density system, as 96 sectors is a lot of disk space!

Corcomp have really done a great job with this program, and being on disk means there is room for another module in the "Widget". The program can also be called up from Extended Basic.

SPEECH RECOGNITION — A Gimmick or a Reality?

By Wayne Worladge

Some readers will be aware that the TI Professional Computer has a speech recognition option. Those of you who have attended computer exhibitions may have seen this facility being demonstrated.

For those who don't know much about it, speech recognition allows you to give commands to the computer verbally, rather than through the keyboard. This can save a lot of time, and the possibilities are endless...BUT at the present stage of development, there are a few snags.

Before detailing them, however, you should be aware that speech recognition is not confined to the "Professional"; it is available for the 99/4A, and Wayne Southwick, of the Melbourne Users Group, has the required gear.

The major snag is that you have to train the computer to accept your voice, or rather, your pronunciation. The special programs used put words onto the screen, and you have to speak them into the headset microphone provided. After the first run through, you have to repeat it, and then, the computer will recognize those words when you say them, and act accordingly. If you think about it, what the computer is really doing, is matching a series of sounds against words. In fact, it does not matter what you say in response to the prompt during the training stages, as long as you are consistent. To make it clearer, you could respond "Rhubarb" to the word "Run", and then, once trained, every time you said "Rhubarb", the computer would recognize those sounds as the instruction to "run". I guess it could be quite funny, if not a little obscene.

The secret to all this is the TMS 320 chip, a single chip which performs speech processing through real-time voice analysis and synthesis. TI claim "speech technology" has three components; "speech synthesis" which allows the computer to emit sounds recognizable as speech, "speech recognition" is the "understanding" of oral instructions by the computer, and "real-time speech analysis" is the recording of the user's voice by the computer, via a microphone.

"Personal Computing", Vol.8, no.1, January 1984, published an interview with one Mike McMahan, who heads the speech systems algorithm development program in TI's Corporate Engineering Centre. (I'd like to hear a speech recognition system handle that mouthful!) The interview was very interesting, and the following information has been substantially sourced from this article.

There are several different types of speech recognition, the prime ones being "speaker dependent" and "speaker independent" systems. The names are almost self-explanatory. In the former, the computer has to be trained to recognize one voice, in the other, it can recognize a class of voices - a group of people with similar speech patterns. This latter may sound the more attractive, but when one considers the multitude of different accents found in a typical Australian office or factory environment, one can see there are limitations.

It is little wonder, then, that the most common system used is the "speaker-dependent" system, where each user has to train the computer for his particular voice. Indeed, says McMahan, it may be necessary to retrain it from time to time - if one has a cold, for instance, or is hoarse after a long day of meetings. In general terms, however, the required responses could be saved on disk, to save time and program space.

The mind boggles at the possibilities, but McMahan is not confident that speech recognition will revolutionize the office as have word processors. Let's face it, one could imagine that a manager could dictate a memo to a dictaphone on his way to the office, play it back into his computer, and the memo would be typed then and there. However, there are limitations that prevent that happening, at least for the present. The vocabulary is limited to about fifty words, though more than one set of fifty can be accomodated. McMahan also points out some environmental problems. Imagine a large, open-plan office with dozens of executives all talking to their personal computers at once! The row would be deafening!

The future is seen more as a facilitation of existing tasks. Two very different examples are given. One relates to fairly complicated programs, such as electronic spreadsheets, where a large number of keystrokes are needed to get to a certain point. These keystrokes could be replaced by a single word, or series of words. The other example was on a production line quality inspection system, where objects are examined by inspectors for defects. If an object has to be examined, using both hands, there are obvious advantages in being able to describe the defects verbally, thereby freeing both hands. The output could go to a computer, which could analyse the data. Much easier than

cont/.....on P. 17.

Game Program– Missile Defence

Program written by John Smart, East Maitland, NSW.

Be warned, John's game requires lightning-fast reflexes, and steady nerves!

In this program, you are the defender of a city under attack by nuclear missiles. As the Commander of an anti-missile gun, it is your job to destroy the missiles before they hit the city, causing untold devastation and loss of life.

The missiles have the nasty habit of coming down at odd angles, as well as vertically. Your city can suffer a certain amount of damage before it erupts in a most spectacular and noisy atomic explosion.

There are five levels of difficulty, of which I mastered absolutely none. The levels vary from "Easy" to "Masochistic", which latter is aptly named.

Go to it, and may your city survive! (At least for a little while.)

```
5 ! Copyright SOFTEX 3/85 -
Ext. Basic
10 RESTORE
100 ON WARNING NEXT
110 CALL TITLE
120 CALL CLEAR
150 DISPLAY AT(1,1):"INSTRUC
TIONS(Y/N)?"
160 CALL KEY(0,K,S):: IF S=0
 THEN 160
170 IF K=89 OR K=121 THEN CA
LL INSTR
180 RESTORE :: CALL LCHOOSE(
LVL)
185 CALL CLEAR :: SC=0 :: HI
TS=0
190 CALL CHAR(127,"1",128,"0
808087F080808",129,"014A2E55
2A769210",130,"FF9999FFFF999
9FF",136,"000000000000AAFF")
195 CALL CHAR(137,"AA55AA55A
A55AA55",119,"FFFFFFFFFFFFFF
FF")
200 CALL SCREEN(2)
210 FOR S=1 TO 16 :: CALL HC
HAR(INT(RND*24)+1,INT(RND*32
)+1,127):: NEXT S
220 CALL COLOR(11,3,1,12,16,
1,13,15,1,14,9,1)
230 CALL HCHAR(24,1,119,32)
240 FOR B=1 TO 32
250 H=INT(RND*6):: CALL VCHA
R(18+H,B,130,6-H)
260 NEXT B
265 FOR C=1 TO 8 :: CALL COL
OR(C,3,1):: NEXT C
270 DISPLAY AT(1,1):"SCORE:"
;SC :: DISPLAY AT(2,1):"HITS
:";HITS :: DISPLAY AT(3,1):"
HIGH SCORE:";HSC
280 CALL SPRITE(#1,128,3,96,
128)
290 SP=LVL*6
300 IF HITS>4 THEN 3000 ELSE
 CALL SPRITE(#3,46,16,1,INT(
RND*256)+1,SP,INT(RND*20)-10
):: SP=SP+1
310 CALL JOYST(1,X,Y):: CALL
 MOTION(#1,-Y*LVL*2.5,X*LVL*
2.5)
315 CALL POSITION(#3,X1,Y1):
: IF X1>180 THEN GOTO 1500
320 CALL KEY(1,K,S):: IF K=1
8 THEN GOSUB 1000
340 DISPLAY AT(1,1):"SCORE:"
;SC :: DISPLAY AT(2,1):"HITS
:";HITS :: GOTO 310
1000 CALL POSITION(#1,X2,Y2)
:: CALL SPRITE(#2,129,9,X2,Y
2):: CALL COINC(#2,#3,8,T)::
 CALL SOUND(-10,-7,0):: CALL
 DELSPRITE(#2)
1010 IF T<>-1 THEN 310
1020 CALL SOUND(-500,-7,0)::
 CALL DEST(X2,Y2):: SC=SC+10
 :: GOTO 300
1500 CALL MOTION(#3,0,0):: C
ALL POSITION(#3,X1,Y1):: CAL
L DELSPRITE(#3)
1505 CALL SCREEN(16):: CALL
SOUND(-1000,-7,0):: CALL SCR
EEN(2)
1510 V=INT(Y1/8):: IF V<2 TH
EN V=2 :: IF V>31 THEN V=31
1520 CALL VCHAR(18,V-1,32,6)
:: CALL VCHAR(24,V-1,136)
1530 CALL VCHAR(18,V,32,6)::
 CALL VCHAR(24,V,136)
1540 CALL VCHAR(18,V+1,32,6)
:: CALL VCHAR(24,V+1,136)
1550 HITS=HITS+1 :: GOTO 300
3000 CALL DELSPRITE(ALL):: C
ALL SCREEN(16):: CALL COLOR(
14,16,9)
3005 CALL SOUND(-4200,-7,0):
: CALL HCHAR(18,1,32,200)::
CALL HCHAR(24,1,136,32)
3010 FOR R=24 TO 1 STEP -1 :
: READ CL,RP :: CALL HCHAR(R
,CL,137,RP):: NEXT R
3020 FOR C=16 TO 2 STEP -1 :
: CALL SCREEN(C):: FOR D=1 T
O 20 :: NEXT D :: NEXT C3030
 FOR C=16 TO 2 STEP -1 :: CA
LL COLOR(14,C,C):: FOR D=1 T
O 20 :: NEXT D :: NEXT C
3040 CALL COLOR(14,9,7)
3050 DISPLAY AT(1,1):"SCORE:
";SC :: DISPLAY AT(2,1):"HIT
S:";HITS :: DISPLAY AT(3,1):
"HIGH SCORE:";HSC
3060 IF SC>HSC THEN HSC=SC E
LSE 3070
3065 FOR B=1 TO 4 :: DISPLAY
 AT(3,1):" " :: CALL SOUND(-
50,2000,0):: DISPLAY AT(3,1)
:"HIGH SCORE:";HSC :: NEXT B
3070 CALL NEON("GAME OVER...
HIT [ENTER]....")
3080 GOTO 180
3100 END
5000 DATA 1,32,5,22,7,16,8,1
4,9,12,9,11,10,10,11,8,11,7,
12,6,12,6,7,16,6,18,11,7,10,
10
5010 DATA 7,17,5,20,4,22,3,2
6,3,28,4,26,5,25,6,23,7,20
10000 SUB TITLE
10010 CALL CLEAR :: CALL SCR
EEN(3)
10020 FOR C=0 TO 12 :: CALL
COLOR(C,16,1):: NEXT C
10030 DISPLAY AT(10,8):"MISS
ILE DEFENCE"
10040 DISPLAY AT(12,9):"BY J
OHN SMART"
10050 DISPLAY AT(14,4):"(CAP
TAIN C.P.U. MERLIN)"
10060 CALL NEON("HIT [ENTER]
 TO BEGIN.......")
10070 SUBEXIT
10080 SUBEND
10100 SUB NEON(M$)
10110 M$=SEG$(M$,LEN(M$)-1,1
)&SEG$(M$,1,LEN(M$)-1)
10120 DISPLAY AT(22,1):M$
10130 CALL KEY(0,K,S):: IF K
<>13 THEN 10110
10140 SUBEXIT
10150 SUBEND
10200 SUB INSTR
10210 CALL CLEAR
10220 PRINT "          INSTRUC
TIONS                 ~~~~~~~
~~~~~"
10230 PRINT :: PRINT " Welco
me to Missile Defence!In thi
s game you are the    defend
er of a city being    attack
ed by a barrage of"
10240 PRINT "ICBMs.You are a
rmed with a  rapid fire anti
-missile     cannon,the sigh
ts of which  are shown by th
e green cross"
10250 PRINT "on the screen.T
o move the   sights and fire
 the cannon  use joystick #1
."
10260 PRINT "  As the game p
rogresses thespeed of the mi
ssiles buildsup.When your ci
ty has been  hit five times
it will be"
10270 PRINT "destroyed.

 Good Luck!"
10280 PRINT : : : :: CALL NE
```

```
ON("Hit [ENTER] to continue.
....")
10290 SUBEXIT :: SUBEND
10300 SUB LCHOOSE(LVL)
10310 CALL SCREEN(3):: CALL
CLEAR :: FOR C=0 TO 11 :: CA
LL COLOR(C,16,1):: NEXT C
10320 DISPLAY AT(1,1):"WHAT
LEVEL DO YOU WISH TO   PLAY
AT?(1-5)?"
10330 DISPLAY AT(5,1):"    1
) VERY EASY                2
) EASY                     3
) NOT QUITE SO EASY"
10340 DISPLAY AT(8,1):"    4
) DEFINATELY VERY HARD     5
) MASOCHISTIC!"
10360 ACCEPT AT(16,1)VALIDAT
E(DIGIT)SIZE(1):LVL :: IF LV
L>5 THEN 10360 ELSE LVL=LVL+
1
10365 IF LVL=1 THEN LVL=1.5
10370 CALL CLEAR
10380 SUBEXIT
10390 SUBEND
10400 SUB DEST(X2,Y2)
10410 CALL SOUND(-1000,-7,0)
:: FOR S=3 TO 10 :: CALL SPR
ITE(#S,46,16,X2,Y2):: NEXT S
10420 CALL MOTION(#3,0,16,#4
,16,16,#5,16,0,#6,16,-16,#7,
0,-16,#8,-16,-16,#9,-16,0,#1
0,-16,16)
10430 FOR C=16 TO 2 STEP -2
:: CALL COLOR(#3,C,#4,C,#5,C
,#6,C,#7,C,#8,C,#9,C,#10,C):
: NEXT C
10440 CALL DELSPRITE(#3,#4,#
5,#6,#7,#8,#9,#10)
10450 SUBEND
```

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Radio Program Review

"WARM BOOT"

"Warm Boot" is a weekly half-hour program broadcast on ABC Radio 2 at 5.30 p.m. on tuesdays. (3AR in Melbourne).

It is quite an informative program, in that it covers the Australian Computer Industry. Micros, Minis and even larger ones get a mention.

Regular segments are broadcast, for example, "computerbabble" explains what the various items of computer terminology mean. It could be argued that the listeners would know the meanings of the words anyhow, but they do give a historical perspective, which can be very informative.

The various segments are introduced with "pop/computer" music, which I personally feel is a waste of valuable broadcasting time.

One program I heard had the following items: "Computerbabble" covered the word "programming", explained its meaning, and gave some of the history of how the early computers were programmed. (Things was tough in them days!);

: there was a debate between a couple of Professors about whether "Wordstar" is the best word processor;

: details were given of a British radio program about computers.

This latter was so interesting that some of it bears repeating here. I think the program was called "Radiorama", but I stand to be corrected. Anyhow, the program is broadcast by Radio West, a commercial station (or network). It seemed to me the program concentrated almost exclusively on home computers such as the Commodore and the ZX-81.

Radio West said their audience was almost exclusively male, aged 14-30. While they seemed to deplore the male domination, they did not seem to know what they should do about it, though they did mention something about knitting pattern programs.

Radio West have a unique feature: they broadcast computer programs. The example given sounded just like the squeaks and squawks that comes from my cassette player. Apparently, the listeners can plug their radios directly into their computers, or record the program on tape, and play it in later. Apparently the latter method is the better.

Anyhow, back to "Warm Boot". I doubt we shall hear much about the TI 99/4A on it, but it is a program well worth listening to on the way home from work.

Character Definition

By B.Rutherford, Dudley, N.S.W.

This program originated after an acquaintance asked if I could do some graphics on a video he was doing for a small company. This was basically to display the company name and products at the start of the tape, with credits at the end. No problem, I thought, little realizing that to produce the company name and products in the same way as they were printed on the advertising pamphlet, would require me to define eighty-three characters. Being a lazy man at heart and a lousy typist, I started to look for a way around typing in all those sixteen digit character codes.

Using the character definition program in the 99/4A reference book as a starting point, I added bits and pieces to store character codes in an array, then save them on disk. This worked reasonably well, but I thought there must be a better way of doing it. I then wrote a small program to read that file and save it in another file in merge format. This, I then merged with the program that used that data. After all this, I decided to put it all together properly, so other people could use it also.

The program is menu-driven, and the main menu looks like this:

MENU

1.Define character
2.Load File
3.Save file
4.Merge file
5.Redefine character
6.Print character code
7.Exit

Select 1 to start defining your characters. The screen changes to a large white square on the left, with the numbers 1 to 8 across the top, and down the left hand side, with the cursor at the top left corner of the square. Only the "1" and "0" keys are used - "1" to turn a dot on, and "0" to turn it off, with FCTN "S" and "D" allowing you to backtrack to correct any errors. The auto-repeat will work if you keep the key depressed. When you have reached the bottom right-hand corner of the square, the cursor moves to the line "char. num.", you then type in the ASCII number of the character you have just defined, if you want to use it, else press <ENTER> for a null entry.

The character code for the character you have just defined is displayed next. Also, one example of this defined character is displayed at screen position 9,13. At this point you have the option of returning to the main menu, by pressing "M", or any other key to continue.

Select "3" to save to disk what you have just done for future reference, or if you still have more to do later.

Select "2" to load a previously saved file, to add to or alter.

Select "6" to print the information to screen or printer in the form :
Order number, ASCII Number, character code.

Select "5" to change a previously defined character. First you type in which one, e.g. 1st., 2nd., 10th., etc. If you do not know which one it was, you can find out by using the print option first. You then define the character in the same way as before. WARNING: If you do not press "M" when you have redefined the character, and go on and do another, it will be the next one on from the one you did last. Also, if you increment past the total you had defined, will not be available to you, and they will be written over when you go back to "1" (define character).

Select "4" for the merge formats, the main reason for using the program. After you have made your selection from the merge menu, you will be asked to type in the line number you want the merge data statements to start from. They will be incremented in tens.

MERGE MENU

1. ASCII and character code
2. Character code only
3. Sprite ASCII and character code
4. Sprite character code only

If you select "1" you will need to have inputted the ASCII character numbers when you defined the characters. If you select "3", not only will you have had to have inputted the ASCII character numbers, they will need to have started with a number divisible by four, and the others to be consecutive.
Assume 500 was selected as the line number to start at, the merged files, when merged with the program the characters were defined for, would look like this:

Selecting "1":
500 DATA [character number], [character code], etc., up to six per line

Selecting "2":
500 DATA [character code], etc., up to eight sets per line.

Selecting "3":

500 DATA [character number], [64 digit character code]

Selecting "4":
500 DATA [64 digit character code]

NOTE: All these are up to five screen lines long, for extended basic programs.

A little about the program.

Lines 100 to 190 are the header, then 200 to 330 is the main program, all the rest being made up of subprograms.

Lines 1000 SUB SCR and 1500 SUB SQ set up the screen for the character definitions. 2000 SUB MEN is the main menu, 3000 SUB CH is used wherever the User has to make a choice, mainly the menu choices.

Line 4000 SUB K is the CALL KEY subprogram used right throughout the program. 4500 SUB FN is the filename subprogram used with SUB SF, SUB RF and SUB MF, the save, load and merge subprograms.

Line 5000 SUB D does the character definitions, and 6000 SUB MLN looks after the merge line numbers.

Line 6500 SUB CD takes care of any redefining, and 6600 SUB PC looks after the printing needs. Lastly, 7000 SUB DC is for a disk check, just to make sure you do have a disk in the drive.

```
100 ! **********************
110 ! *CHARACTER DEFINITION*
120 ! *     PROGRAMME      *
130 ! *        BY          *
140 ! *  BRIAN RUTHERFORD   *
150 ! * TI EXTENDED BASIC   *
160 ! **********************
170 !
180 !
190 !
200 OPTION BASE 1 :: DIM C$(
112,2):: CALL CLEAR :: CALL
SCREEN(5):: N=0 :: CALL CHAR
(95,"00FF"):: CALL COLOR(0,1
6,5)
210 FOR I=1 TO 12 :: CALL CO
LOR(I,16,1):: NEXT I :: CALL
 CHAR(130,""):: CALL CHAR(13
1,RPT$("F",16)):: CALL COLOR
(13,2,16)
220 CALL MEN :: CALL CH(7,K)
230 ON K-48 GOSUB 250,260,27
0,280,290,300,310
240 GOTO 220
250 CALL SCR :: CALL D(C$(,)
,N):: RETURN
260 CALL RF(C$(,),N):: RETUR
N
270 CALL SF(C$(,),N):: RETUR
N
280 CALL MF(C$(,),N):: RETUR
N
290 CALL CD(C$(,)):: RETURN
300 CALL PC(C$(,),N):: RETUR
N
310 CALL SCREEN(7):: DISPLAY
 AT(12,1)ERASE ALL:"HAVE YOU
 SAVED YOUR DATA Y/N"
320 CALL SOUND(99,-1,0):: CA
LL K(S,K):: IF K=78 THEN CAL
L SCREEN(5):: GOTO 220
330 IF K<>89 THEN 320 ELSE C
ALL CLEAR :: STOP
1000 SUB SCR
1010 DISPLAY AT(3,5)ERASE AL
L:"Character definition":TAB
(4);RPT$("_",22):: DISPLAY A
T(8,2):"12345678"
1020 FOR I=1 TO 8 :: DISPLAY
 AT(8+I,1):STR$(I):: NEXT I
:: DISPLAY AT(18,3):"0=OFF=W
HITE":"  1=ON =BLACK"
1030 DISPLAY AT(21,2):"Press
 M for menu":" any other key
 to continue" :: DISPLAY AT(
23,1):"Char num.":"Char code
"
1040 SUBEND
1500 SUB SQ
1510 FOR R=1 TO 8 :: CALL HC
HAR(8+R,4,130,8):: NEXT R ::
 SUBEND
2000 SUB MEN
2010 DISPLAY AT(2,13)ERASE A
LL BEEP:"MENU" :: DISPLAY AT
(3,12):"______" :: DISPLAY A
T(5,4):"1 Define character":
 :"   2 Load file"
2020 DISPLAY AT(9,4):"3 Save
 file": :"   4 Merge file":
:"   5 Re-def. character": :
"   6 Print char. code": :"
  7 Exit" :: SUBEND
3000 SUB CH(X,K):: DISPLAY A
T(23,2)BEEP:"Your choice"
3010 CALL K(S,K):: IF S<1 TH
EN 3010 ELSE IF K>48 AND K<(
X+49)THEN SUBEXIT
3020 DISPLAY AT(24,1)BEEP:"A
 number between 1 and ";X ::
 GOTO 3010
3030 SUBEND
4000 SUB K(S,K)
4010 CALL KEY(3,K,S)
4020 SUBEND
4500 SUB FN(F$)
4510 DISPLAY AT(23,1)ERASE A
LL BEEP:"Filename" :: ACCEPT
 AT(23,10)SIZE(10):F$ :: CAL
L DC
4520 SUBEND
4600 SUB SF(C$(,),N)
4610 CALL FN(F$):: OPEN #1:"
DSK1."&F$,SEQUENTIAL,INTERNA
L,OUTPUT,VARIABLE 40
4620 PRINT #1:N :: FOR I=1 T
O N :: PRINT #1:C$(I,1),C$(I
,2):: NEXT I :: CLOSE #14630
 SUBEND
4700 SUB RF(C$(,),N)
4710 CALL FN(F$):: OPEN #1:"
DSK1."&F$,SEQUENTIAL,INTERNA
L,INPUT ,VARIABLE 40
4720 INPUT #1:N :: FOR I=1 T
O N :: INPUT #1:C$(I,1),C$(I
,2):: NEXT I :: CLOSE #14730
 SUBEND
5000 SUB D(C$(,),N):: DIM CH
A(8,8):: H$="0123456789ABCDE
F"
5010 CALL SQ :: FOR R=1 TO 8
 :: FOR C=1 TO 8
5020 CALL HCHAR(8+R,3+C,30):
: CALL K(S,K):: IF S=0 THEN
5020 ELSE IF K<>8 AND K<>9 T
HEN 5040 ELSE GOSUB 5110
5030 GOTO 5020
5040 K=K-48 :: IF K<0 OR K>1
 THEN 5020 ELSE CHA(R,C)=K
5050 CALL HCHAR(8+R,3+C,130+
K):: NEXT C :: NEXT R :: N=N
+1
5060 ACCEPT AT(23,12)VALIDAT
E(DIGIT):C$(N,1):: C$(N,2)="
"
5070 FOR R=1 TO 8 :: L=CHA(R
,5)*8+CHA(R,6)*4+CHA(R,7)*2+
CHA(R,8)+1 :: H=CHA(R,1)*8+C
HA(R,2)*4+CHA(R,3)*2+CHA(R,4
)+1
5080 C$(N,2)=C$(N,2)&SEG$(H$
,H,1)&SEG$(H$,L,1):: NEXT R
:: DISPLAY AT(24,12):C$(N,2)
:: CALL CHAR(132,C$(N,2)):
CALL HCHAR(9,13,132)
5090 CALL K(S,K):: IF S=0 TH
EN 5090 ELSE IF K=77 THEN SU
BEXIT
5100 DISPLAY AT(23,12):"" ::
 DISPLAY AT(24,12):"" :: CAL
L HCHAR(9,13,32):: GOTO 5010
5110 CALL HCHAR(8+R,3+C,130+
CHA(R,C)):: IF K=9 THEN 5140
5120 C=C-1 :: IF C<>0 THEN R
ETURN ELSE C=8
5130 R=R-1 :: IF R<>0 THEN R
ETURN ELSE R=8 :: RETURN
5140 C=C+1 :: IF C<>9 THEN R
ETURN ELSE C=1
5150 R=R+1 :: IF R<>9 THEN R
ETURN ELSE R=1 :: RETURN
5160 SUBEND
5500 SUB MF(C$(,),N):: DEF U
Q$(X$)=CHR$(200)&CHR$(LEN(X$
))&X$
5510 DISPLAY AT(5,10)ERASE A
LL BEEP:"Merge Menu" :: DISP
LAY AT(6,9):RPT$("_",12):: D
ISPLAY AT(8,2):"1 ASCII & Ch
```

```
ar. code"
5520 DISPLAY AT(10,2):"2 Cha
r. code only": :" 3 Sprite A
SCII & Char. code": :" 4 Spr
ite Char. code only" :: CALL
 CH(4,K)
5530 DISPLAY AT(22,2):"Line
number you want DATA":"state
ments to start from" :: ACCE
PT AT(24,1):LN :: CALL FN(F$
)
5540 I=INT((22-LEN(F$))/2)::
 DISPLAY AT(12,I)ERASE ALL:"
MERGING ";F$ :: DISPLAY AT(1
3,I-1):RPT$("_",10+LEN(F$))
5550 OPEN #1:"DSK1."&F$,OUTP
UT,DISPLAY ,VARIABLE 163
5560 ON K-48 GOTO 5570,5610,
5650,5690
5570 FOR I=1 TO N STEP 6 ::
A$="" :: CALL MLN(A$,LN)
5580 FOR J=0 TO 5 :: A$=A$&U
Q$(C$(I+J,1))&CHR$(179)&UQ$(
C$(I+J,2))
5585 IF I+J+1>N THEN 5600 EL
SE IF C$(I+J+1,2)<>"" AND J<
5 THEN A$=A$&CHR$(179)ELSE 5
600
5590 NEXT J
5600 A$=A$&CHR$(0):: PRINT #
1:A$ :: LN=LN+10 :: NEXT I :
: GOTO 5720
5610 FOR I=1 TO N STEP 8 ::
A$="" :: CALL MLN(A$,LN)
5620 FOR J=0 TO 7 :: A$=A$&U
Q$(C$(I+J,2)):: IF I+J+1>N T
HEN 5640 ELSE IF C$(I+J+1,2)
<>"" AND J<7 THEN A$=A$&CHR$
(179)ELSE 5640
5630 NEXT J
5640 A$=A$&CHR$(0):: PRINT #
1:A$ :: LN=LN+10 :: NEXT I :
: GOTO 5720
5650 FOR I=1 TO N STEP 4 ::
B$,A$="" :: CALL MLN(A$,LN):
: A$=A$&UQ$(C$(I,1))&CHR$(17
9)
5660 FOR J=0 TO 3 :: B$=B$&C
$(I+J,2):: IF C$(I+J+1,2)=""
 OR I+J+1>N THEN 5680
5670 NEXT J
5680 A$=A$&UQ$(B$)&CHR$(0)::
 PRINT #1:A$ :: LN=LN+10 ::
NEXT I :: GOTO 5720
5690 FOR I=1 TO N STEP 4 ::
B$,A$="" :: CALL MLN(A$,LN):
: FOR J=0 TO 3 :: B$=B$&C$(I
+J,2):: IF C$(I+J+1,2)="" OR
 I+J+1>N THEN 5710
5700 NEXT J
5710 A$=A$&UQ$(B$)&CHR$(0)::
 PRINT #1:A$ :: LN=LN+10 ::
NEXT I
5720 PRINT #1:CHR$(255)&CHR$
(255):: CLOSE #1
5730 SUBEND
6000 SUB MLN(A$,LN)
6010 A$=CHR$(INT(LN/256))&CH
R$(LN-256*INT(LN/256))&CHR$(
147)
6020 SUBEND
6500 SUB CD(C$(,))
6510 DISPLAY AT(20,4)ERASE A
LL BEEP:"Which number do you
":"   wish to change ?"
6520 ACCEPT AT(21,21)SIZE(3)
VALIDATE(DIGIT):N :: N=N-1 :
: CALL SCR :: CALL D(C$(,),N
):: DISPLAY AT(24,1)ERASE AL
L BEEP:"Any more to re-defin
e Y/N"
6530 CALL K(S,K):: IF K=89 T
HEN 6510 ELSE IF K<>78 THEN
6530
6540 SUBEND
6600 SUB PC(C$(,),N)
6610 DISPLAY AT(6,9)ERASE AL
L BEEP:"Print options":TAB(8
);RPT$("_",15):: DISPLAY AT(
9,6):"1   Screen": :TAB(6);"
2   Printer"
6620 CALL CH(2,K):: IF K=50
THEN 6680
6630 DISPLAY ERASE ALL :: A=
0 :: FOR I=1 TO N :: A=A+1 :
: IF A=21 THEN GOSUB 6650
6640 PRINT I;TAB(7);C$(I,1);
TAB(11);C$(I,2):: NEXT I ::
GOSUB 6650 :: SUBEXIT
6650 PRINT "PRESS ANY KEY TO
 CONTINUE"
6660 CALL K(S,K):: IF S=0 TH
EN 6660 :: IF A=21 THEN A=0
6670 RETURN
6680 OPEN #1:"PIO" :: DISPLA
Y AT(12,10)ERASE ALL:"PRINTI
NG":TAB(9);RPT$("_",10)
6690 FOR I=1 TO N :: PRINT #
1:TAB(5);I;TAB(10);C$(I,1);T
AB(15);C$(I,2):: NEXT I :: C
LOSE #1
6700 SUBEND
7000 SUB DC
7010 CALL SCREEN(14):: DISPL
AY AT(12,1)ERASE ALL BEEP:"H
ave you put the disk in?" ::
 DISPLAY AT(24,1):"Press any
 key to continue"
7020 CALL K(S,K):: IF S<1 TH
EN 7020
7030 DISPLAY ERASE ALL :: CA
LL SCREEN(5):: SUBEND
```

SOFTWARE COMPETITION WINNER

GOOD NEWS FOR COOKS!

RECIPE STORAGE AND RETRIEVAL PROGRAM.

Review by Wayne Worladge

There were not a lot of entries in the SOFTEX Software Competition. Nonetheless, the standard was excellent.

It is, perhaps, an indicator of the growing maturity of TI Users that fewer entries than expected were received. By maturity, I mean that more and more Users are upgrading their systems, thereby gaining access to TI-Writer, Multiplan, Assembly Language, FORTH, and so on. While this acclimitization takes place among Users, there won't be a lot of time for entering competitions. One would hope, though, that as more Users attain higher levels of sophistication in their use of the computer, some very interesting programs and applications should come forth.

It was originally intended to publish the winning program in SOFTEX, but it is just too long, and that has two results; it takes up too many pages, and may deter interested parties from going to the effort of all that typing, and later debugging. As a result, we have decided to make it available on disk, for $10.00.

There are a couple of points to be made at the outset. The first one is that you need a full system, though having a printer is optional, but nonetheless desirable. The second point is that this program does not actually store recipes, but stores which cookbook to find them in. If that sounds a bit trivial, I can assure you it is not, for the program has a remarkable search facility which enables you to use key words to search for an appropriate recipe for a particular given occasion.

The program runs in Extended Basic, and like Multiplan, is "Diskname" dependant.

The title screen gives you a choice of ENTREE, MAIN, DESSERT and OTHER. This is to categorize recipes, thereby reducing search time for both computer and Cook.

Having made a selection, you are then given another selection screen. (The word "menu" would be confusing, so it has not been used.) You can FIND a recipe, ADD new recipes, CHANGE information about recipes, or DELETE them altogether from the file.

First, though, the information stored for each recipe must be understood. We start with NAME, which can be up to 28 characters long. Then there is the recipe TYPE, 9 characters, e.g. casserole, or vol-au-vent, etc. One is warned to be consistent here.

A key INGREDIENT is next required. Here you would list the major ingredient, say, "chicken", or "beef".

SERVES gives an indication of how many persons the recipe will feed. A number, or number range can be used here.

TIME is your own specified indicator, you may wish to use total time, including preparation, or just cooking time. Again, one should strive for consistency. TIME is required in the format "h.mm", i.e. 2.45 means two hours forty-five minutes.

BOOK reserves 13 characters for the name of the book, or, if you are highly organized, and have numbered your cookbooks, then the number will do. (Anyone so organized has probably taught the computer to operate the oven!)

PAGE is the page number of the book, and COMMENT allows 28 characters to record your impressions, such as "too spicy for the oldies" or "hot as hell", etc.

The above, is, I feel an adequate number of key pointers for your recipe. It is conceivable that ingredient cost may be of interest to some people, but it would need continuous upadating. Kilojoule content may have been a useful addition in these diet-conscious days. One could then have specified in the FIND option a maximum kilojoules content. This could be especially handy for those on special diets. Such information can be added in the comments section, anyhow.

Editing and deleting recipes is more than adequately covered in the five pages of instructions, but FIND is well worth elaboration.

The FIND option is one of the stronger points of this program. It is possible to list to screen or printer the results of very specific or very general FIND instructions. The User is prompted by NAME, TYPE and INGREDIENT. In using the latter two, one must follow exactly the spelling used in ADDing the recipe in the first place. In NAME, however, any word used in the name will be searched for, that is, if you type in "chicken", all the chicken recipes will be available, that is, all the chicken recipes meeting the type and ingredient specification. However, if you have left the TYPE and INGREDIENT fields blank, then you will get

ALL the recipes with "chicken" in the NAME field. FIND is a very powerful option indeed.

The arrow keys are used to position the cursor in the fields you want. Taking the cursor off the top or bottom of the screen will either take you back to the previous selection list, or cause all recipes in that category to be listed. It does take a little getting used to, but it is a very fast method of selection indeed, and another strong point of the program.

This program uses the 99/4A and Extended Basic very well indeed. It is easy to use, quick to learn, and gives a very fine example of a program which utilizes the disk system to do a lot of the work. It should not be difficult to modify the program to have more subdivisions, if you need them. The program comes on disk, and has some example entries for you to manipulate to gain familiarity with the program.

Indeed, alteration of a few fields here and there could allow you to use the program as an index for books on subjects other then cookery. It is claimed 600 recipes can be stored on a disk.

We feel this program is a worthy winner of our competition.

Stop Press

"...just between you and me..."

IBM ANNOUNCES PCJR FAILURE.

After producing some 250,000 to 300,000 PCJR's IBM announced mid-March that it will cease production of this computer.

The PCJR started off with a keyboard like the original TI-99/4. After nearly a year of lack luster sales IBM tried an up-graded keyboard, but found that despite this the Home computer market was not there, and retail sales were not profitable; something TI and others learnt some 18 months ago.

Now, when people say to you that the TI-99/4A was unsuccessful, you can point the finger at the "PCJR" as being one of the same crowd.

Any wagers on who is next?

Book Review

"Learning TI 99/4A Home Computer Assembly Language Programming", by Ira McComic, Wordware Publishing, Plano, Texas, 1984.

Book supplied by Prentice-Hall of Australia Pty. Ltd. for review, recomended retail price $27.50.

Australians, as a group, tend to use the latter part of December and the first few weeks of January as their annual holiday period, and head for the seaside en masse.

This year, I had three choices:
1. Go to the seaside;
2. Send the rest of the family to the seaside and stay at home myself;
3. All of us stay at home.

Naturally option 3 was financially attractive, and both options 2 & 3 were attractive in that I could get some work done around the house, and get my computer system into some semblance of order. I could go through all my disks, deleting piles of junk I've accumulated, and then recatalog them. I could look at a lot of programs I've never run. I could start to come to grips with Assembly ...Joy! Bliss!

Any reader who is married will already be laughing. However desirable those options were to me, the result would be a rapid, democratic 1:1 veto by the rest of the family.

So, the next most logical thing to do was to take the computer to the beach. (I can hear the howls of mirth already.) After the car was loaded, there was room for us and a small mouse. OK, OK, we could have taken the other car, or, indeed both cars - the result would have been the same. "Necessities" for the period away multiply to fill the available space. I once knew a guy who had a five ton van - his wife still had to drive the car because the van was not big enough!

So what's the next best thing, knowing that without TV the nights should be long and peaceful? The answer is to take some books and learn a bit more about the 99/4A. I decided to attack Assembly Language, armed with the Ed./Ass. manual and the book above.

The first point to appreciate is that the manual assumes a knowledge of Assembly Language, so a Teaching book is essential. Most such books recommend that the manual be frequently referred to, so it is necessary to have them both, and it is also much easier if you can get hands-on experience with the computer, (something I was denied.)

The first thing any book will tell you to do is to become familiar with hexadecimal and binary nubers, and their interconversion. Do not think you know them - work through a few examples, and make sure. Facility in this respect is essential.

This book starts with a description of what high- and low- level languages are, and then goes into hex and binary. After that, the serious business starts.

I found the book very nearly complete in itself. While frequent reference to the manual was recommended, I found it wasn't absolutely necessary. Assembly Language is not easy, so do not expect it to be a piece of cake. But Ira McComic has the knack of getting his message across very effectively, and after a few nights, and a fair bit of re-reading, the message began to sink in.

The book gives quite a few example programs to demonstrate the various commands. I would think typing them in would aid immensely in the learning process.

One disappointment was that the utility routines were not covered in sufficient depth. For example, no sample program was available which printed anything onto the screen. Seeing something on the screen is extremely rewarding, regardless of how trivial it is.

The success or otherwise of a book of this nature must be guaged by the understanding of the subject gained by the reader. I do not pretend that I have instantly become an assembly Language expert, or even that I can write a program that works, even a tiny one. But I do judge the book as successful, for I do think I finally understand the basis of Assembly Language. (Something must have clicked, for I worked out that the text on pages 85 & 86 should have followed p.88.)

When one considers the multiplicity of commands available, it is easy to be overwhelmed. Careful consideration, however, can relieve this, by thinking as follows: think of all the available BASIC and XBASIC commands. How many of the ones available do you regularly use? Yet you know they are there, and a reference to the manual is all that is needed fo you to utilize them. I think the same applies with Assembly.

To conclude, I believe that Assembly language can be self-taught with the aid of a book like this. There is no substitute for the assistance of friends in your local User Group, nonetheless. It is a complex subject, but Ira McComic makes it as easy to understand as is feasible. Recommended reading.

Basic Tutorial

Saucers

Program by Peter Gleed, Melbourne

Comments and Notes by Wayne Worladge.

We have been considering for some time how best to provide some information on how to improve programming in BASIC, at a fairly elementary level. We have considered the possibilities available, and have decided to dissect programs, to show how they do what they do. There are plenty of books available to teach programming. (One is reviewed in this issue.) Tips are also useful, but generally need to be seen in context.

This program is really a "Space Invaders" type program, and as such, is dated. However, Peter wrote it for a course on BASIC he was attending, and I think you will agree he has done quite a good job of simulating an old favourite.

This program has been presented for several reasons:

1. It provides intersting graphics and sound routines, which are detailed in the text, so that they can be used by readers for their own purposes and experimentation;
2. It uses a subroutine to display text in a fixed position on the screen, something very useful in any BASIC program.
3. It is a good example of BASIC programming, and deserves analysis.

PROGRAM NOTES

Sub-routines:

Peter has made extensive use of sub-routines, and for convenience of those who wish to dissect the program, the major ones are listed below.

Sub-routine 1670

This is the subroutine which one has to use in BASIC to be able to display characters on the screen at a particular position. If you like, it is the equivalent of "DISPLAY AT" IN XBASIC, but is a little more cumbersome and is slower in execution. Nonetheless, it does the job. How it works is that CALL HCHAR is used to specify the position on the screen, and, if you recall, in CALL HCHAR the ASCII code of the character must be specified. So what one does is to use the FOR-NEXT loop to obtain the letters of the word(s) one at a time using SEG$, and provide the ASCII code of each to CALL HCHAR using the ASC function. To ensure they are not displayed one on top of the other, the column value,(in this program COL, but it can be a number), is incremented by one each time through the loop. The FOR-NEXT loop knows when to end looping because the LEN function is used to determine the length of the word(s), in this case PR$.

Sub-routine 1720 (Titles)

Here Peter has redefined the "hash", character 35, to be a character suitable for making up the title words. He also includes the sound routines here.

PROGRAM LISTING

```
100 CALL CLEAR
110 FOR L=128 TO 132
120 READ AS$
130 CALL CHAR(L,AS$)
140 NEXT L
150 DATA 98EFFF19,0119F7FF98
,000098EFFF19,00000019F7FF98
,00000098EFFF19
160 CALL CHAR(35,"98EFFF19")
170 CALL CHAR(40,"18BA003333
005A18")
180 CALL CHAR(95,"00FF")
190 CALL CHAR(152,"001")
200 CALL CHAR(133,"18BA00333
3005A18")
210 CALL CHAR(136,"00666666F
FFFFF00")
220 CALL CHAR(137,"000066666
6FFFFFF")
230 CALL CHAR(144,"242424242
4242424")
240 RANDOMIZE
250 DEF NR=INT(RND*20)+3
260 DEF NC=INT(RND*32)+1
270 DEF NV=INT(RND*23)+5
280 DEF SR=INT(RND*12)+3
290 DEF N=INT(RND*3)
300 DEF J=(C1-C)/3
310 GOSUB 1730
320 HSC=0
330 M(0)=1
340 M(1)=-1
350 M(2)=0
360 PN=3
370 FG=3
380 SC=0
390 CL=8
400 PT=0
410 C1=5
420 C=10
```

```
430 EC=1
440 CALL CLEAR
450 FOR L=3 TO 8
460 CALL COLOR(L,4,1)
470 NEXT L
480 CALL COLOR(2,16,1)
490 CALL COLOR(16,SR,1)
500 CALL COLOR(13,16,1)
510 CALL COLOR(14,7,1)
520 CALL COLOR(15,11,1)
530 PR$=" SCORE 0         HI-
SCORE"
540 ROW=1
550 COL=2
560 GOSUB 1680
570 GOSUB 2050
580 CALL HCHAR(2,1,95,32)
590 FOR L=6 TO 27 STEP 3
600 CALL HCHAR(24,L,136)
610 NEXT L
620 FOR L=1 TO 100
630 CALL VCHAR(NR,NC,152)
640 NEXT L
650 GOSUB 1490
660 FOR R=4 TO 24
670 CALL VCHAR(R-1,NV,152)
680 FOR D=128 TO 132
690 CALL VCHAR(R,C,D,P(0))
700 IF EC>0 THEN 810
710 CALL VCHAR(R,C+1,32,P(0)
+1)
720 CALL VCHAR(R,C+3,D,P(1))
730 CALL VCHAR(R,C+4,32,P(1)
+1)
740 CALL VCHAR(R,C+6,D,P(2))
750 CALL VCHAR(R,C+7,32,P(2)
+1)
760 CALL VCHAR(R,C+9,D,P(3))
770 CALL VCHAR(R,C+10,32,P(3
)+1)
780 CALL VCHAR(R,C+12,D,P(4)
)
790 CALL VCHAR(R,C+13,32,P(4
)+1)
800 GOTO 900
810 CALL VCHAR(R,C-1,32,P(0)
+1)
820 CALL VCHAR(R,C+3,D,P(1))
830 CALL VCHAR(R,C+2,32,P(1)
+1)
840 CALL VCHAR(R,C+6,D,P(2))
850 CALL VCHAR(R,C+5,32,P(2)
+1)
860 CALL VCHAR(R,C+9,D,P(3))
870 CALL VCHAR(R,C+8,32,P(3)
+1)
880 CALL VCHAR(R,C+12,D,P(4)
)
890 CALL VCHAR(R,C+11,32,P(4
)+1)
900 IF R<24-PN THEN 940
910 FOR L=0 TO 4
920 IF R+P(L)>23 THEN 1080
930 NEXT L
940 CALL KEY(0,K,S)
950 IF (K<50)+(K>57)THEN 980
960 C1=K*3-144
970 GOSUB 1250
980 IF (C>5)*(C<15)THEN 1010
990 EC=M(INT(C/10))
1000 GOTO 1020
1010 EC=M(N)
1020 C=C+EC
1030 IF H=PN*5 THEN 650
1040 NEXT D
1050 CALL HCHAR(R,C-2,32,34-
C)
1060 GOSUB 1610
1070 NEXT R
1080 PR$=" THE MARTIANS HAVE
 LANDED"
1090 ROW=12
1100 COL=5
1110 GOSUB 1680
1120 GOSUB 1940
1130 GOSUB 1610
1140 IF SC<HSC THEN 1170
1150 HSC=SC
1160 GOSUB 2050
1170 PR$=" PRESS ANY KEY FOR
 NEW GAME"
1180 ROW=12
1190 COL=4
1200 GOSUB 1680
1210 CALL KEY(0,K,S)
1220 IF S=0 THEN 1210
1230 GOTO 360
1240 REM FIRE GUN
1250 CALL SOUND(-200,110,10,
-4,5)
1260 CALL VCHAR(24,C1,137)
1270 CALL VCHAR(24,C1,136)
1280 CALL GCHAR(R,C1,G)
1290 IF G<128 THEN 1430
1300 FG=R-1+P(J)
1310 CALL VCHAR(FG,C1,144,24
-FG)
1320 CALL VCHAR(FG,C1,133,2)
1330 CALL VCHAR(FG,C1,32,24-
FG)
1340 CALL SOUND(-100,110,4,-
7,0)
1350 CALL SOUND(-200,110,8,-
7,4)
1360 CALL SCREEN(SR)
1370 CALL SCREEN(SR)
1380 CALL SCREEN(2)
1390 H=H+1
1400 SC=SC+PT
1410 P(J)=P(J)-1
1420 RETURN
1430 CALL VCHAR(R,C1,144,24-
R)
1440 CALL VCHAR(R,C1,40)
1450 CALL VCHAR(R,C1,32,24-R
)
1460 CALL SOUND(-100,110,8,-
7,4)
1470 RETURN
1480 REM RE-SET
1490 IF PN>19 THEN 1510
1500 PN=PN+1
1510 FOR L=0 TO 4
1520 P(L)=PN
1530 NEXT L
1540 H=0
1550 PT=PT+10
1560 CL=SR
1570 IF INT(CL/2)<>CL/2 THEN
 1560
1580 CALL COLOR(13,CL,1)
1590 RETURN
1600 REM DISPLAY SCORE
1610 PR$=STR$(SC)
1620 ROW=1
1630 COL=8
1640 GOSUB 1680
1650 CALL COLOR(16,SR,1)
1660 RETURN
1670 REM PRINT AT
1680 FOR L=1 TO LEN(PR$)-1
1690 CALL HCHAR(ROW,COL+L,AS
C(SEG$(PR$,L+1,1)))
1700 NEXT L
1710 RETURN
1720 REM TITLES
1730 CALL SCREEN(2)
1740 PRINT "USE KEYS 2 TO 9
TO FIRE GUNS": : : :
1750 PRINT TAB(4);"### #  #
# # #   # ###":
1760 PRINT TAB(4);"#   #  #
# # ##  # #":
1770 PRINT TAB(4);"##  #  ##
# # # # # #":
1780 PRINT TAB(4);"#   #   #
  # #  ## # #":
1800 PRINT TAB(1);"### ### #
 # ### ### ### ###":
1810 PRINT TAB(1);"#   # # #
 # # # # # #":
1820 PRINT TAB(1);" #  ### #
 # #   ### ##   #":
1830 PRINT TAB(1);"  # # # #
 # #   #   # #   #":
1840 PRINT TAB(1);"### # # #
## ### ### # # ###": : : : :
1850 FOR L1=1 TO 10
1860 CALL COLOR(1,SR,1)
1870 RESTORE
1880 FOR L2=1 TO 4
1890 READ A$
1900 CALL CHAR(35,AS$)
1910 NEXT L2
1920 NEXT L1
1930 REM SOUND
1940 FOR L=24 TO 0 STEP -0.5
1950 CALL SOUND(50,590,L,-3,
L+3)
1960 CALL SCREEN(15)
1970 CALL SCREEN(2)
1980 NEXT L
1990 CALL SOUND(200,110,4,-7
,0)
2000 CALL SOUND(300,110,8,-7
,4)
2010 CALL SOUND(400,110,12,-
7,8)
2020 CALL SOUND(500,110,16,-
7,12)
2030 CALL SOUND(4000,110,24,
-7,20)
2040 RETURN
2050 PR$=STR$(HSC)
2060 ROW=1
2070 COL=26
2080 GOSUB 1680
2090 RETURN
```

Around the Groups

Throughout Australia active groups of users have banded together to form part of an international link to spread tips, knowledge, programs and the latest news amongst each other. About 4 years ago Shane Anderson from Sydney began the task of trying to find other users of the TI-99/4. Gradually small groups began across Australia, until today there are in excess of 2000 members, without counting the spouses, children, relations and friends who also have some contact with the groups. If you are not a member of a group, then I strongly advise you to join one NOW as it will be up to the groups to find support and developments in the future with T.I. now out of the home computer market.

In Australia all groups have kept together and shared news amongst themselves, so it is not an advantage to belong to one group in preferance to another, although logically the nearest one to you should be the one you join. All groups have newsletters, program libraries, numerous overseas contacts etc.. However they each operate in different ways according to size, membership and assets. Following below are details, contacts, costs and services provided by the groups. It is our intention to publish meeting dates and news in further issues to keep you informed of the activities. In addition to the Capital City groups there are regional ones springing up across the country, eg. Newcastle, Mt. Gambier, who are affiliated with the larger groups.

Doug Thomas.

TI-994/A Users Group Melbourne

Co-Ordinator: Doug Thomas.
Address: 59 Landstrom Quadrant, Kilsyth. 3137.
Telephone: (03) 7258178.
Membership Cost: $15.00 per 12 month period.
Tape Membership: $35.00 for 6 C-60 Tapes with 15 to 20 programs on each. Variety of programs on each, collected from local, interstate and overseas sources. Non members can join tape membership only for $40.00. Programs posted to all subscribers at 2 monthly intervals.
(second Sat. of month except April) Meetings: Held monthly Saturday afternoons at Victoria College, Burwood Rd., Burwood at 2.00 pm..
Next Meeting: May 11th., June 8th.-Annual Meeting.
Newsletter: Posted bi-monthly, offering news, tips, programs and details of next meetings.
Fees sent to: TI-99/4 Users Group Melbourne, 123 Ashburn Grove, Ashburton. 3147.

T.I.C.H.U.G. (Canberra)

Co-Ordinator: Von Klimpel
Address: P.O. Box 610, Belconnen. A.C.T. 2617.
Telephone: (062) 588486
Membership Costs: $18.00 per year.
Meetings: Held bi-monthly.
Tape Software: $5.00 ea., with 8 to 10 programs on each.
Newsletter: CHUG.A.LUG, produced bi-monthly.
Fees sent to: TICHUG, P.O. Box 610, Belconnen. A.C.T. 2616.

T.I.U.P. (Perth)

Co-Ordinator: Les Twiss.
Address: P.O. Box 246, Mt. Lawley. 6050.
Telephone: (09) 2718642
Membership Costs: $15.00 pa. or $10.00 pa. Newsletter only.
Meetings: Held the third Saturday afternoon each month. Free copies of software is availiable at meetings, on supplying own C-90 tape.
Newsletter: Published bi-monthly giving program listings, tutorials, and in depth reviews.
Fees sent to: TIUP, P.O. Box 246, Mt. Lawley. 6050. W.A.
Very experienced group of programmers who are leading the way with Assembler and other languages.
Bulletin Board operating: Phone No: (09)

A.T.I.C. (Adelaide)

Co-Ordinator: Fred Cugley.
Address: 26 Suffolk Ave., Brahma Lodge. 5109.
Telephone: (08) 2583499.
Membership Cost: $24.00 pa.
Meetings: Held ea. 6/8 weeks at a School, advised in Newsletter
Newsletter: Published bi-monthly and posted.
Program Tapes: Availiable at $6.00 ea. for 10 good programs. The Group is currently going through a transition stage, with the Co-Ordinator and Secretary looking to stand down from their positions.
Fees sent to: ATICC, 26 Suffolk Ave., Brahma Lodge. 5109. S.A.

T.I.U.S.H.U.G. (Sydney)

Co-Ordinator: Peter Varga.
Secretary: John Robinson, P.O. Box 149, Pennant Hills. 2120.
Telephone: (02) 8480956
Membership Cost: $10.00 initial joining fee, $22.00 per 12 month period.
Meetings: Held first Saturday each month (2nd. Sat. if 1st. a holiday weekend) at 2.00 pm. at St. Johns Church Hall, Victoria Street, Darlinghurst. Regional metings held between main meetings on various nights.
Newsletter: Posted monthly, giving news, tips, programs, and future meeting details.
Program Tapes: Sold $3.00 ea. at meetings, $4.00 ea. Posted. Each contain about 10 programs, and are set themes, eg. Extended Basic, Ext. Basic Music, Games, Ord. Basic, Ord. Music, Speech. No subscription service, ordered separately.
Fees sent to: TISHUG, P.O. Box 149, Pennant Hills. 2120.
Features: Program Crisis Line.
Bulletin Board for Modems, commenced 1.07.84. Phone No: (02) 5600926. To register as a user write to: TI.S.H.U.G.BBS, P.O. Box 595, Marrickville. 2204.
Monthly Software Competition with prizes up to $50.00.

TI Tas Users Group (Hobart)

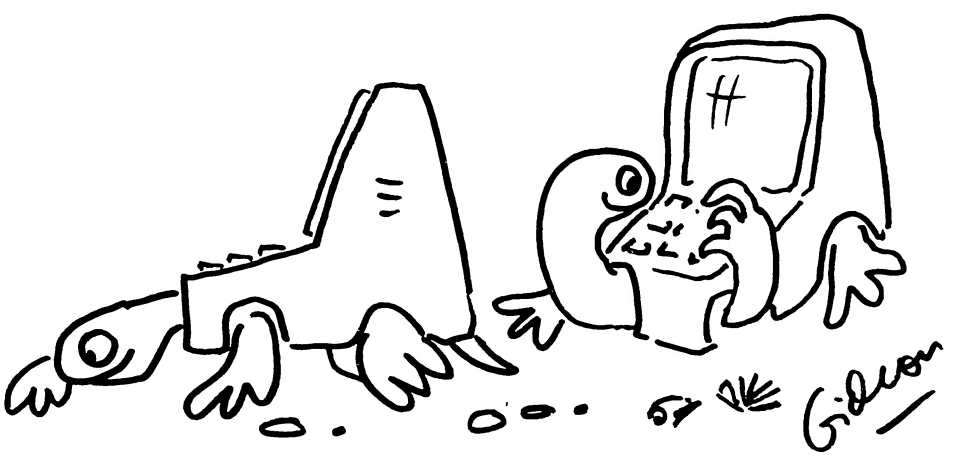
Co-Ordinator: Rex Shephard.
Address: 1 Benboyd Crt., Rokeby. 7019.
Telephone: (002) 294009.(Leon Lonergan)
Membership Cost: $15.00 per year.
Meetings: Meet every third Sunday of the month at the University of Tasmania from 2pm. to 4pm. in Room 373.
Tape Software: $5.50 a C-60 tape ($9.00 SS/SD Disk) of user written programs.
Newsletter: Bi-monthly.
Fees sent to: T.I. Tas Users Group, 7 Tarana Road, Blackman's Bay. 7152. Tasmania.

T.I.U.B.U.G. (Brisbane)

Co-Ordinator: Mr. Greg Lane.
Address: P.O. Box 57, Aspley. 4034.
Telephone: (07) 2641562
Membership Cost: $22.00 pa. reducing on a sliding scale from September.
Meetings: Held monthly, check for venue.
Newsletter: Bug-Bytes, published monthly and posted.
Program Tapes: $5.00 ea. plus $1.00 Postage.
Features: Programmers Hot Line.
Operate several sub-groups in area.
Home Computer Magazines is sold at meetings along with other odds and ends.
Running an Assembly language workshop.
Fees sent to: TIBUG, P.O. Box 57, Aspley. 4034. QLD..

National TI-994/A Users Group of Australia

Co-Ordinator: Doug Thomas, 59 Landstrom Quadrant, Kilsyth. 3137. Vic.
Functions as a co-ordinating role between the various groups throughout Australia. Does not actively organise functions or meetings except between Co-ordinators and other interest parties. Acts as a distribution point for Software and other Data received internationally.



Melbourne User Group Tapes

Copies of Melbourne TI-99/4 Users Group Tapes are available to non-Members for $8.00 ea., including postage, by sending your cheque to:

TI-99/4 Users Group Melbourne,
123 Ashburn Grove,
Ashburton. 3147.

To date a total of 26 Tapes have been issued, with details of the first 22 tapes being given in earlier issues of Softex. Details of Tapes 22, 23, 24, and 25 are included below.

TI-99/4 USERS GROUP MELBOURNE TAPE 22

PAY RECORD-Instructions	EXT. BASIC
PAY RECORD PROGRAM-Tape Based	EXT. BASIC
DROUGHTS-for 2 persons, no cheating allowed. A great game.	EXT. BASIC
FROGGY- another version of this popular game, requires Joysticks.	EXT. BASIC
GOBLIN-Use keys O & P to guide yourself before being demolished.	BOTH
NUMERICAL INTEGATION #2	BOTH
ELEMENTARY MATRIX OPERATIONS #2	BOTH
PLOTTING-Sub program PLOTTY, plots values of y & x, using 256x192 pixels	EXT. BASIC
SPACE INVADERS-Press keys S & D to move, space bar to fire.	ORD.
TEST DRIVER FOR DFT SUB.	BOTH
FIRST ADDITION WITH SPEECH-Generates numbers based on childs age.	TEII,S.S.
FLIGHT AIDE-Instructions for Simulator, Printer option, line 620	EXT. BASIC
FLIGHT SIMULATOR-Same version as Tape 16	EXT. BASIC
CRAZYFRAZE-See how you can mix up a sentence by changing different words. TEII and Speech option	ORD.
ADDITION MAGICIAN-Logic addition game for all ages, 9 digits hidden on 3x3 grid-sounds easy but!!	BOTH
MULTIPLICATION MADNESS-Logical Multiplication game.	BOTH
JET ENGINE THEORY-Great example of using the computer for teaching, great graphics-Speech option	TEII-ORD.
TV ADJUST-Three helpfull test Patterns	ORD.

TI-99/4 MELBOURNE USERS GROUP TAPE 23

Side A:

Sprites - Introduction (for Disk)	Ext.
Sprites - Capital Letters, uses speech	Ext.
Sprites - Small Letters, uses speech.	Ext.
Sprites - Numbers, uses speech.	Ext.
Acme Hotel - Find which room has a bomb hidden in before it blows.	Both.
Pro-writer - will add TEII speech to any non-module dependant program with standard PRINT statements (for Disk System)	Ext.
Rotation of Object - Photographic pgm. for shooting rotating objects	Both.
Exposure - Photographic Exposure option aide.	Both.
Party Game 1 -** X Rated ** Adult Strip game for 8 people.	Both.
Party Game 2 -** X Rated ** As above for 8 people but with speech added.	TEII & Speech.
Super-type - Tape/Disk Word Processor	Ext.
Bat Attack - Watch out!!	Ext.
Maths Table Tutor - uses speech for table practice.	Ext. & Speech.
Ski Run 2 - Try skiing down the slope with out collecting the trees. Joysticks required.	Ext.
Skip the Loot - Great graphics,Joystick &	Ext.
Space Battle - another space battle. Use Joystick 1 to move, 'Q' Key to fire.	Ext.
Periodic Table of Elements - test your knowledge of Chemistry.	Both.
Bugz - Computized version of Bettles, playing against the computer.	Ext.

TI-99/4 USERS GP. MELBOURNE TAPE 24

Side A.

Cat and Mouse Joysticks Ext.

Hallelejah Chorus Both.

Hare and Tortoise Ext.
Basics for long Division
for Grade 5 level children.

Disk Sort Program Ext.

Golf Both.
Try your hands at 18 holes.

Jungle Jim (99'er Pgm.) Ext.
You have to jump over various obstacles by pressing 'I' and using Arrow Keys.

Basic Number Facts Both.

Snake Ext.

Ground to Air Missiles Both.

Teachers Pet Ext.
Record system for teachers.

Doodling Both.
A drawing program.

Editing Aid Ext.
Enables to save a section of a program, delete a block of lines Nos, Print a line No. cross reference- Disk Based.

Forbidden City Both.
Adventure game, find treasure in a alien city.

Gambling Games Ord.
Show Poker, Two-up, Pontoon.

Statistics Both.

Maths Problems Both.
Covers Perimeter,Area, Volume.

TI-99/4 USERS GP. MELBOURNE TAPE 25

Side A.

Star Duel Ext.
Great Graphics Keyboard
Space game.

Cannibals 99'er Ext.

Cheque Book Balance Both.

Chuck-a-Luck 99'er Ext.
Dice game for 2/4 persons.

Grisley Adventure 99'er Ord.

San Francisco Tourist 99'er Both.

Snap-Calc Ext.
See Home Computer mag.
Aug. 84, page 34(Vol 4,No 3)

Speech Program Speech Syn. Ext.

Spell & Score Both.
Try and make words out of a series of scrambled letters.

Stadium Jumping H.C. Mag. Ext.
Ride your horse over the hurdles-Joysticks opt..

Tablut H.C. Mag. Ext.

Tax Deduction File 99'er Ext.

Banana Boat Ext.

Candy Man Ext.

Baby Elephant Walk Ext.

OTHER PUBLICATIONS FOR THE TI-99/4A.

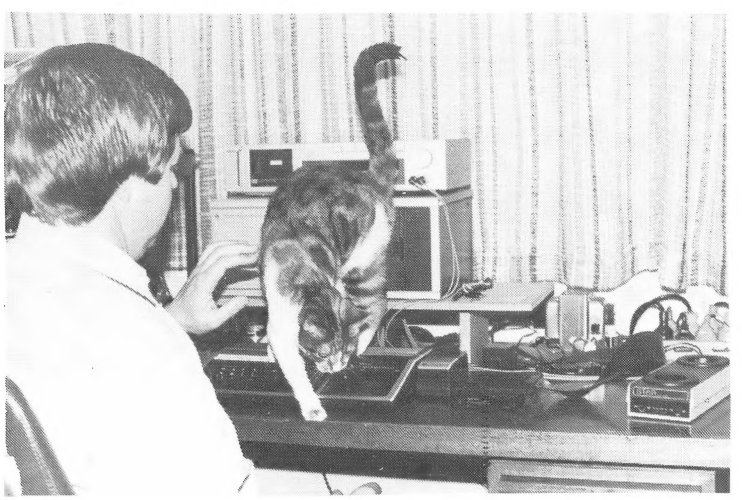
Those of you who have been buying various computer Magazines have found that few make any referance to the TI-99/4A.

One of the best new magazines to come available is called **"MICROpendium"** from USA and costs $25.50 US for 12 issues Airmail.

This magazine contains 40 pages, is produced monthly and is printed on newspaper. Numerous advertisements abound for software and hardware, along with some good articles. Reviews of new software, eg. Navarone Industries DBM system, the CorComp Controller and even a run down on the 99/8 have been covered to date.

Magazines such as 'Home Computer Magazine', 'Compute', have not satisfied the demand for information on the 99/4A, as they try to cover to many computers in one issue. This magazine is recomended for any TI-99/4A enthusiast and can be subscribed to directly by sending a Bank Draft for $25.50 to:-

MICROpendium,
P.O. Box 1343,
Round Rock, TX 78680.
U.S.A.



Who else has their cat trying to learn to operate the keyboard? The only trouble is "she" uses an "all paws" principle.

Back Issues of Softex

SOFTEX still has available back issues of the 5 earlier editions which contain valuable information and reviews of Software and Hardware. Copies of Issues No 1, 2, and 3 are available for $3.00 ea., with Issues 4 and 5 at $5.00 ea., postage included.

Below is a summary of the major articles in each issue for your information.

Vol 1 No. 1 - Nov. 1983

TI Axes the 99/4A, Text-It simple word processor, Roll your own Joy Stick, Use of the PRK Module, Quality Printing using the Brother HR-15 Daisy Wheel Printer, Peripherals - why have them, The Power of Speech, Review of TI-Toad, Little Programs for little Kids.

Vol 1 No. 2 - Jan. 1984

Cure for the **Lock-up** on the TI-99/4A, Review Amust 80-DT and P-88 Printers, RS232 Interface-uses, use of the PRG Module, Computer Hacking, Programs for Inventory Control, Loans, Cheque Sorting and advanced use of Basic, Review of Entrapment, Gripe Corner-The Service Industry.

Vol 1 No. 3 - May 1984

Adding a Disk Drive to your computer, Imagic, Review of Cartridge Expander, Disk Fixer, Horescope Maker, Homework Helper, Super Sort, Shuttle Modem, Brother EP-44 Printer, programs for Auto-Run program, Tic-Tac-Toe, Mail Labels, Financial Advisor and Turbo Racer(game), Book Review-"Introduction to Assembly Language for the TI Home Computer" and Data Page.

Vol 1 No. 4 - Sept. 1984

Using TI-WRITER, Workstations, Talking to your Printer, Mini Feature-Importing, Astrology by computer, User Group Personality-Shane Andersen, Programs for Spelling Practice, Sort Routine, and Challenger(game), Book Review-"Kids and the TI-99/4A", solution to the TI-WRITER form feed problem, new Software.

Vol 1 No. 5 - Dec. 1984

Review of CorComp Expansion system, CorComp DS/DD Disk Controller Card, Axiom ParallAx Printer interface, 99/4 Auto Spell Checker, new Amust Printers, Tac-2 Joysticks, Data Base Management, "Brick-Bat" game, Workstations continued, Programs for Maths Practice, Menu Maker, Assembly Language Disk Cataloguer, Book Review-"TI Basic", Softex Personality.